

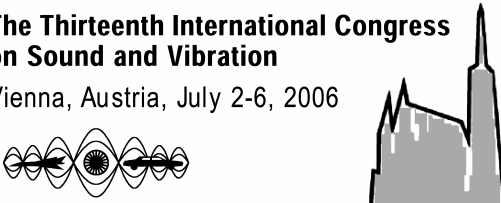
| Wednesday, July 5, 2006 | | | | | | | | | | | | | | | | | | | |
|-------------------------|-------------------------------------|---------------------------------|------------------------------|--------------------------------------|---------------------------------|--|----------------|------------------------|---|--------------------------------|--|----------------------------|-------------------------------------|-------------------------------------|---------------------------|---|------------------------------------|---|------------------------|
| Time/Room | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 |
| 08:30-09:20 | Plenary Keynote Lecture 5 (AudiMax) | | | | | | | | | | | | | | | | | | |
| 09:30-10:00 | Coffee Break | | | | | | | | | | | | | | | | | | |
| Session | RS03-6 | RS06-1 | RS02-3 | SS29-1 | SS09-2 | RS08-3 | SS23-1 | RS16-4 | SS30-2 | RS21-2 | SS39-1 | RS25-2 | RS15-1 | RS22-6 | SS11-1 | SS28-2 | SS33-1 | SS20-1 | RS20-1 |
| 10:00-12:00 | Active Noise & Vibration Control | Community & Environmental Noise | Acoustics & Vibration Theory | Elastic Waves in Solids & Structures | Nonlinear Acoustics & Vibration | Condition Monitoring & Vibration Testing | Modal Analysis | Measurement Techniques | Architectural Acoustics | Noise Source Identification | Computational Aeroacoustics Models & Methods | Signal Processing | Machinery Noise & Vibration Control | Non-linear Acoustics & Vibration | Duct Acoustics & Mufflers | Intel. Methods of Active Noise & Vibration Control | Noise Mapping & GIS | Env. Noise & Vib. from Urban Transportation | Noise Control Elements |
| 12:00-13:30 | Lunch | | | | | | | | | | | | | | | | | | |
| 13:30-14:20 | Plenary Keynote Lecture 6 (AudiMax) | | | | | | | | | | | | | | | | | | |
| Session | RS03-7 | RS06-2 | RS02-4 | SS29-2 | SS09-3 | RS08-4 | SS23-2 | RS16-5 | SS30-3 | SS38-1 | SS37-1 | RS25-3 | RS15-2 | SS02-1 | SS11-2 | SS13-1 | SS33-2 | SS20-2 | RS20-2 |
| 14:30-16:30 | Active Noise & Vibration Control | Community & Environmental Noise | Acoustics & Vibration Theory | Elastic Waves in Solids & Structures | Nonlinear Acoustics & Vibration | Condition Monitoring & Vibration Testing | Modal Analysis | Measurement Techniques | Architectural Acoustics | Numerical Methods in Acoustics | Active Damping of Flexible Structures | Signal Processing | Machinery Noise & Vibration Control | Noise & Vibration in Space Vehicles | Duct Acoustics & Mufflers | Soil Vibrations by Infrastructure | Noise Mapping & GIS | Env. Noise & Vib. from Urban Transportation | Noise Control Elements |
| 16:30-17:00 | Coffee Break | | | | | | | | | | | | | | | | | | |
| Session | RS03-8 | RS23-1 | RS02-5 | SS29-3 | SS09-4 | RS08-5 | SS23-3 | RS16-6 | SS03-1 | SS38-2 | SS37-2 | SS31-1 | RS15-3 | SS02-2 | SS11-3 | SS07-1 | RS31-1 | SS04-1 | |
| 17:00-19:00 | Active Noise & Vibration Control | Occupational Noise | Acoustics & Vibration Theory | Elastic Waves in Solids & Structures | Nonlinear Acoustics & Vibration | Condition Monitoring & Vibration Testing | Modal Analysis | Measurement Techniques | Acoustic Materials & Their Characterisation | Numerical Methods in Acoustics | Active Damping of Flexible Structures | Architecture & Urban Sound | Machinery Noise & Vibration Control | Noise & Vibration in Space Vehicles | Duct Acoustics & Mufflers | Active Control of Noise & Vibrations & Prac. Sys. Impl. | Vibro-Acoustics & Shock Excitation | Acoustic Signal Processing | |

| Wednesday, July 5, 2006 | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Time/Room | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 |
| Plenary Keynote Lecture 5 (AudiMax) | | | | | | | | | | | | | | | | | | | |
| Coffee Break | | | | | | | | | | | | | | | | | | | |
| Session | RS03-6 | RS06-1 | RS02-3 | SS29-1 | SS09-2 | RS08-3 | SS23-1 | RS16-4 | SS30-2 | RS21-2 | SS39-1 | RS25-2 | RS15-1 | RS22-6 | SS11-1 | SS28-2 | SS33-1 | SS20-1 | RS20-1 |
| 10:00-10:20 | 434 | 440 | 446 | 452 | 458 | 464 | 470 | 476 | 482 | 488 | 494 | 500 | 506 | 512 | 515 | 521 | 526 | 532 | 537 |
| 10:20-10:40 | 435 | 441 | 447 | 453 | 459 | 465 | 471 | 477 | 483 | 489 | 495 | 501 | 507 | 513 | 516 | 523 | 527 | 533 | 538 |
| 10:40-11:00 | 436 | 442 | 448 | 454 | 460 | 466 | 472 | 478 | 484 | 490 | 496 | 502 | 508 | 514 | 517 | 525 | 528 | 534 | 539 |
| 11:00-11:20 | 437 | 443 | 449 | 455 | 461 | 467 | 473 | 479 | 485 | 491 | 497 | 503 | 509 | 515 | 518 | 525 | 529 | 535 | 540 |
| 11:20-11:40 | 438 | 444 | 450 | 456 | 462 | 468 | 474 | 481 | 486 | 492 | 498 | 504 | 510 | 516 | 519 | 526 | 530 | 536 | 541 |
| 11:40-12:00 | 439 | 445 | 451 | 457 | 463 | 469 | 475 | 481 | 487 | 493 | 499 | 505 | 511 | 517 | 520 | 526 | 531 | 537 | 542 |
| Lunch | | | | | | | | | | | | | | | | | | | |
| Plenary Keynote Lecture 6 (AudiMax) | | | | | | | | | | | | | | | | | | | |
| Session | RS03-7 | RS06-2 | RS02-4 | SS29-2 | SS09-3 | RS08-4 | SS23-2 | RS16-5 | SS30-3 | SS38-1 | SS37-1 | RS25-3 | RS15-2 | SS02-1 | SS11-2 | SS13-1 | SS33-2 | SS20-2 | RS20-2 |
| 14:30-14:50 | 543 | 549 | 555 | 561 | 567 | 573 | 579 | 585 | 591 | 597 | 603 | 609 | 612 | 618 | 624 | 630 | 636 | 642 | 647 |
| 14:50-15:10 | 544 | 550 | 556 | 562 | 568 | 574 | 580 | 586 | 592 | 598 | 604 | 610 | 613 | 619 | 625 | 631 | 637 | 643 | 648 |
| 15:10-15:30 | 545 | 551 | 557 | 563 | 569 | 575 | 581 | 587 | 593 | 599 | 605 | 611 | 614 | 620 | 627 | 632 | 638 | 644 | 649 |
| 15:30-15:50 | 546 | 552 | 558 | 564 | 570 | 576 | 582 | 588 | 594 | 600 | 606 | 612 | 615 | 621 | 628 | 633 | 639 | 645 | 650 |
| 15:50-16:10 | 547 | 553 | 559 | 565 | 571 | 577 | 583 | 589 | 595 | 601 | 607 | 613 | 616 | 622 | 629 | 635 | 640 | 646 | 651 |
| 16:10-16:30 | 548 | 554 | 560 | 566 | 572 | 578 | 584 | 590 | 596 | 602 | 608 | 614 | 617 | 623 | 629 | 635 | 641 | 647 | 652 |
| Coffee Break | | | | | | | | | | | | | | | | | | | |
| Session | RS03-8 | RS23-1 | RS02-5 | SS29-3 | SS09-4 | RS08-5 | SS23-3 | RS16-6 | SS03-1 | SS38-2 | SS37-2 | SS31-1 | RS15-3 | SS02-2 | SS11-3 | SS07-1 | RS31-1 | SS04-1 | |
| 17:00-17:20 | 652 | 657 | 662 | 667 | 672 | 677 | 682 | 688 | 691 | 696 | 701 | 705 | 710 | 715 | 717 | 722 | 727 | 732 | 736 |
| 17:20-17:40 | 653 | 658 | 663 | 668 | 673 | 678 | 683 | 689 | 692 | 697 | 702 | 706 | 711 | 716 | 718 | 723 | 728 | 733 | 737 |
| 17:40-18:00 | 654 | 659 | 664 | 669 | 674 | 679 | 684 | 690 | 693 | 698 | 703 | 707 | 712 | 717 | 719 | 724 | 729 | 734 | 738 |
| 18:00-18:20 | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 690 | 694 | 699 | 704 | 708 | 713 | 718 | 720 | 725 | 730 | 735 | 739 |
| 18:20-18:40 | 656 | 661 | 666 | 671 | 676 | 681 | 686 | 691 | 695 | 700 | 705 | 709 | 714 | 719 | 721 | 726 | 731 | 736 | 740 |
| 18:40-19:00 | | | | | | | 687 | | | | | | | | | | | | |

ICSV13 - Vienna

The Thirteenth International Congress
on Sound and Vibration

Vienna, Austria, July 2-6, 2006



Wednesday
July 5, 2006

08:30 – 09:20

| | | |
|-------|--|---------|
| PS05 | Plenary Session 5 Chairperson: D. NEWLAND | AudiMax |
| 08:30 | Keynote Lecture Psychoacoustic basis of sound quality evaluation and sound engineering Fastl, H.* | 5 |

09:30 **COFFEE BREAK**

10:00 – 12:00

| RS03-6 | Active Noise and Vibration Control Chairpersons: T. BASTEN, B.M. GIBBS | H1 |
|--------|---|-----|
| 10:00 | The use of dynamical recurrent neural network for identification and active vibration control of a laminated thin plate Kouhi, S.*; Montazeri, A.; Poshtan, J. | 434 |
| 10:20 | Passive vibration control of plates using piezoceramics and negative capacitance shunt circuits: numerical and experimental assessment Chegury Viana, F.; Steffen Jr., V.; Rade, D.* | 435 |
| 10:40 | Set membership identification of lightly damped flexible beam for robust control Montazeri, A.*; EsmailSabzali, H.; Poshtan, J.; Jahed Motlagh, M. | 436 |
| 11:00 | Simulation and robust control of piezo electric beam Yasrebi, N.*; Mayahy, A.; Rajae Salmasi, F.; Rakhsha, R. | 437 |
| 11:20 | A detailed evaluation of analytical, numerical and experimental methods for a smart piezoelectric beam in a higher frequency range Dennerlein, J.*; Köppe, H.; Nunninger, S.; Bechtold, M.; Gabbert, U. | 438 |
| 11:40 | Robust control of a smart beam with piezoelectric actuators Khanmirza, E.*; Yousefi-Koma, A.; Akbari, S.; Tarverdi zadeh, B. | 439 |

| RS06-1 | Community and Environmental Noise Chairperson: C. HELLMICH | H2 |
|--------|--|-----|
| 10:00 | Long-term noise prediction in a busy airport Alberici, A.*; Bssanino, M.; Mussin, M.; Sachero, V.; Telaro, B. | 440 |
| 10:20 | Study and proposal of the prediction equation for traffic noise during workable days in Buenos Aires downtown Ausejo, M.*; Recuero, M. | 441 |
| 10:40 | New approach to studying traffic noise nuisance Derbal, R.*; Zeghlache, H. | 442 |
| 11:00 | Territoriality and sound delimitation of urbain space Derbal, R.*; Zeghlache, H. | 443 |
| 11:20 | Lärmspoiler, friendly noise, innovative noise abatement technology along tracks and roads Brunbauer, W.* | 444 |
| 11:40 | Day-evening-night levels appraisal using a 'noise chart' Guglielmo, A.*; Carati, G.; Carlini, E.; Marzi, C.; Donati, D. | 445 |

| RS02-3 | Acoustics and Vibration Theory Chairpersons: R. HEUER, E.M. SALOMONS | H3 |
|--------|---|-----|
| 10:00 | Sound radiation by the coloured noise excited viscoelastic shallow shells Kozien, M.*; Nizioł, J. | 446 |
| 10:20 | Vibroacoustic behaviour of cylindrical shell: comparison of numerical approach and experimental measurement El Hafidi, A.*; Lay, B.; Plessy, A. | 447 |
| 10:40 | Wave analysis of vibration energy transmission at the corner of two plates for reduction of structure-borne sound Chen, D.*; Che, C. | 448 |
| 11:00 | Torsional vibration analysis on circular and annular plate Wu, T.* | 449 |
| 11:20 | Free vibration analysis and dynamic behaviour on the multilayered composite plates formulation Kai, J.* | 450 |
| 11:40 | Free vibration of layered annular circular plate of variable thickness by spline approximation Viswanathan, K.* | 451 |

| SS29-1 | Elastic Waves in Solids and Structures Organisers: V. KRYLOV, S. SOROKIN | H4 |
|--------|---|-----|
| 10:00 | Acoustic wave scattering from a clad rod encased in an isotropic matrix Honarvar, F.*; Sodagar, S.; Sinclair, A. | 452 |
| 10:20 | Wave-based analysis for exact transfer functions of one-dimensional distributed parameter systems Kang, B.* | 453 |
| 10:40 | Wave propagation, reflection and transmission in non-uniform beams Lee, S.*; Mace, B.; Brennan, M. | 454 |
| 11:00 | Resonant vibrations and acoustic radiation of rotating spherical structures Shatalov, M.*; Fedotov, I.; Joubert, S. | 455 |
| 11:20 | A thin orthotropic plate under transverse impulse loading Cerv, J.*; Vales, F. | 456 |
| 11:40 | A middle frequency method based on space-averaged quadratic variables for one-dimensional systems Devaux, C.*; Joly, N.; Pascal, J. | 457 |



| SS09-2 | Nonlinear Acoustics and Vibration Organiser: W. GAN | H5 |
|--------|--|-----|
| 10:00 | Quantum nondestructive testing Gan, W.* | 458 |
| 10:20 | Nonlinear dynamic analysis of a 2-DOF discontinuous system under two-frequency excitations Zu, J.* | 459 |
| 10:40 | High technology processes based on aeroacoustic effect Erofeev, V.*; Vorobjova, G.; Genkin, P. | 460 |
| 11:00 | Quantum acoustical imaging Gan, W.* | 461 |
| 11:20 | Application of negative refraction to ultrasonic nondestructive evaluation Gan, W.* | 462 |
| 11:40 | Intensity effects of finite amplitude ultrasonic waves on the absorption coefficient Khelladi, H.*; Djelouah, H. | 463 |

| RS08-3 | Condition Monitoring and Vibration Testing Chairpersons: E. KOZACZKA, A. TROHIDIS | H6 |
|--------|--|-----|
| 10:00 | Methods for detecting faults and damages in gear units Belsak, A.*; Flasker, J. | 464 |
| 10:20 | Noise reduction of a high precision gearbox based on experimental study Kim, W.*; Im, H.; Park, J.; Chung, J. | 465 |
| 10:40 | Analysis of roller bearings vibration during nondestructive testing on gearbox Docekal, A.* | 466 |
| 11:00 | Time series analysis of cylinder cover vibration and diesel engine fault diagnosis Zhu, J.* | 467 |
| 11:20 | Study on changes of dynamic characteristics according to cracked condition in a turbine blade Yang, K.*; Cho, C.; Bae, C.; Kim, G.; Song, O. | 468 |

| SS23-1 | Modal Analysis Organiser: J. WASSERMANN | H7 |
|--------|--|-----|
| 10:00 | Comparison between different approaches for low-frequency vibroacoustic analysis of a plate coupled to air or water filled cavity David, J.* | 470 |
| 10:20 | Interval dynamic analysis for structures with bounded uncertain parameters Gao, W.*; Kessissoglou, N. | 471 |
| 10:40 | A perturbation method for the accurate estimation of the vibration spectrum for the Timoshenko beam Coleman, M.* | 472 |
| 11:00 | A new evolutionary optimization method with an example of a connecting-rod model Okuma, M.*; Yoshida, M.; Nakahara, T. | 473 |
| 11:20 | Modal analysis of the high-voltage disconnecter using finite element method Negru, M.*; Rinderu, P.; Manea, I. | 474 |
| 11:40 | Spectrum analysis of the SF6 high voltage circuit breaker using finite element method Negru, M.*; Rinderu, P.; Manea, I. | 475 |

| RS16-4 | Measurement Techniques Chairpersons: C. ADAM, H. WADA | H8 |
|--------|--|-----|
| 10:00 | An acoustical method for the localisation of fire propagation risks in buildings Ryden, L.* | 476 |
| 10:20 | Multi-channel reverberation time measurement with sweeps Massarani, P.*; Muller, S. | 477 |
| 10:40 | Design, construction, and validation of a reverberation room Elnemr, Y.; Elnady, T.* | 478 |
| 11:00 | New techniques to characterize soft rubber materials used in tires Tittmann, B.*; Lucas, I.; Ashok, V. | 479 |
| 11:20 | Experimental determination of the acoustic characteristics of porous materials in a standing wave tube Lim, B.*; Chang, H. | 481 |

| SS30-2 | Architectural Acoustics Organiser: J. KANG | S9 |
|--------|---|-----|
| 10:00 | Prediction of the reverberation time in rooms with non uniform absorptions using a diffusion model Billon, A.*; Sakout, A. | 482 |
| 10:20 | Numerical and visual analyses of sound propagation and scattering in concert halls by means of a FDTD method Miyashita, T.* | 483 |
| 10:40 | Characterization of low frequency sound field in the scaled chambers Hyun-Ju, K.*; Jae-Seung, K.; Bong-Ki, K.; Jun-Shin, L. | 484 |
| 11:00 | Measurement of the average sound pressure level in a room at low frequency Moorhouse, A.*; Ramadorai, R. | 485 |
| 11:20 | Certified acoustical measurements according to ISO3382 of teatro colon - Buenos Aires - Argentina Valletta, P.*; Gareis, R.; Sánchez Quintana, R. | 486 |
| 11:40 | Sustainability analysis of architectural acoustic materials Kang, J.; Yu, C.* | 487 |

| RS21-2 | Noise Source Identification Chairperson: I. MORIOKA | S10 |
|--------|--|-----|
| 10:00 | Sound power level estimation of a machine in presence of disturbing noise sources De Sitter, G.*; Guillaume, P.; Talal, A. | 488 |
| 10:20 | Vibro-acoustic characterization of a light metro rail Rusciano, N.*; Viscardi, M.; Ferraiuolo, S. | 489 |
| 10:40 | Noise sources identification of a diesel engine using sound intensity technique Garg, N.*; Bhattacharya, M.; Jain, S. | 490 |
| 11:00 | Acoustic behaviour of a switched reluctance motor Llado, J.*; Sanchez, B.; Martinez, A.; Martin del Rio, B.; Vicuña, J. | 491 |
| 11:20 | Acoustic characterization of an induction cooking Sanchez, B.*; Llado, J.; Garcia, J.; Pina, C.; Monterde, F. | 492 |

| SS39-1 | | S11 |
|---|--|-----|
| Computational Aeroacoustics – Models and Methods Organiser: R. LEUNG | | |
| 10:00 | An advanced branch and bound method to interpolate acoustic data on structural finite element meshes Rose, M.*; Nagel, B. | 494 |
| 10:20 | Experience of using a CFD code for estimating the noise generated by gusts along the sun-roof of a car Lai, L.* | 495 |
| 10:40 | Low speed jet noise prediction using the vortex sound formulation Alonso, M.*; Avital, E. | 496 |
| 11:00 | Identification of sources of sound in low mach number flows by the use of flow field eigenmodes Kierkegaard, A.*; Efraimsson, G.; Hoepffner, J.; Åkervik, E.; Åbom, M. | 497 |
| 11:20 | Direct simulation of duct aero-acoustics using CE/SE method Leung, R.*; Yu, K.; Tang, S. | 498 |

| RS25-2 | | S12 |
|---|--|-----|
| Signal Processing Chairpersons: A. CIOLFI, F. JACOBSEN | | |
| 10:00 | Impedance of multilayered matching of ultrasonic piezo transducers Sung, C.*; Zhu, Y.; Chiang, Y. | 500 |
| 10:20 | Vibration-proof systems of hydrophysical velocity field sensors in the contour of a circular cylinder Fedotov, G.* | 501 |
| 10:40 | Vector quantization techniques for remote train detection Carvalho, C.*; Martins, C.; Serralheiro, A. | 502 |
| 11:00 | A recursive time-frequency method for the signal processing of flutter test with progression speed Shubiao, S.; Chengming, P.* | 503 |
| 11:20 | Voice message priorities using fuzzy mood identifier Abdel Alim, O.*; Elragal, H.; Mahmoud, H. | 504 |
| 11:40 | On the IIR inverse filter merits for the equalization of loudspeaker non-minimum phase systems Marques, A.*; Freitas, D. | 505 |

| RS15-1 | | S13 |
|--|---|-----|
| Machinery Noise and Vibration Control Chairpersons: D.J. INMAN, E. NIJMAN | | |
| 10:00 | Design of adjustable hydro-pneumatic damper for cab suspension Ruotsalainen, P.; Nevala, K.; Marjanen, Y.* | 506 |
| 10:20 | Performance analysis of vibration isolation for vehicle ER suspension systems Tseng, W.*; Wu, J. | 507 |
| 10:40 | Modelling a selective hydro-pneumatic suspension element Kroneld, P.; Liedes, T.; Nevala, K.; Marjanen, Y.* | 508 |
| 11:00 | Allocation of three control forces to four actuators for 3-DOF hybrid vibration isolation system Mizutani, K.*; Ito, K.; Ikeura, R. | 509 |
| 11:20 | Application of feed forward structures for isolation of car engine vibration Paschedag, J.*; Schwarz, J. | 510 |
| 11:40 | Comparison of different actuator configurations for active isolation of car engine induced vibration regarding power consumption Paschedag, J.*; Koch, G. | 511 |

| RS22-6 | | S14 |
|---|---|-----|
| Non-Linear Acoustics and Vibration Chairpersons: J. BÖS, H. HUNT | | |
| 10:00 | Can we guarantee the enhancement of accuracy of time integration analyses with smaller nonlinearity tolerances? Soroushian, A.* | 512 |
| 10:20 | Robust response convergence for time integration of nonlinear equations of motion in lengthy time intervals Soroushian, A.* | 513 |
| 10:40 | Calculation of influence on the dispersion law of the temperature variations of atoms Vladimir, S.*; Vladimir, G.; Yuri, S. | 514 |

| SS11-1 | | S15 |
|---|--|-----|
| Duct Acoustics and Mufflers Organisers: M. ABOM, H. BODEN, A. TORREGROSA | | |
| 10:00 | Multi-mode sound propagation in pod silencers Kirby, R.* | 515 |
| 10:20 | Hybrid mufflers with short lateral chambers: analytical, numerical and experimental studies Denia Guzmán, F.*; Selamet, A.; Martínez Bordes, M.; Torregrosa Huguet, A. | 516 |
| 10:40 | Use of parallel micro-perforated panel absorbers for noise control in ducts Sum, K.*; Peng, S. | 517 |
| 11:00 | Elliptical side resonators for broadband noise reduction: theory and experiments Marten, M.*; Wijnant, Y.; de Boer, A. | 518 |
| 11:20 | Passive noise control design used on automotive HVAC system to reduce tonal noise Wang, P.* | 519 |
| 11:40 | Side branch resonator for axial cooling fan Prezelj, J.*; Čudina, M. | 520 |

| SS28-2 | | S16 |
|--|--|-----|
| Intelligent Methods of Active Noise and Vibration Control Organiser: O. TOKHI | | |
| 10:00 | Smart modal control of a flexible panel using smart actuators Tanaka, N.* | 521 |
| 10:20 | Application of digital filter based motion command preconditioning methods for vibration suppression of a flexible truss with densely spaced modes Glossiotis, G.*; Antoniadis, I. | 523 |
| 10:40 | Interior active noise control in turbofan aircraft: numerical simulation and optimal actuators positioning using dedicated genetic algorithms Monaco, E.*; Franco, F.; Lecce, L. | 525 |



| SS33-1 | Noise Mapping & GIS Organiser: G. LICITRA | S17 |
|--------|--|-----|
| 10:00 | Integrated solutions noise-mapping - GIS Probst, W.* | 526 |
| 10:20 | GIS and noise mapping - recent solutions Stapelfeldt, H.*; Shilton, S. | 527 |
| 10:40 | Comparison between EU directive noise exposure and annoyance Knauss, D.* | 528 |
| 11:00 | Simulating the effect of diffuse reflections on noise maps using phonon mapping de Greve, B.*; Willems, T.; De Muer, T.; Botteldooren, D. | 529 |
| 11:20 | Techniques to measure the European LDEN noise indicator for major sources in complex urban environments Paviotti, M.*; Kephelopoulos, S.; Iacoponi, A. | 530 |
| 11:40 | Use of web based real time noise data transmission for acoustic investigation and noise mapping Cerniglia, A.*; Amadasi, G. | 531 |

| SS20-1 | Environmental Noise & Vibration From Urban Transportation Organiser: C. VOGIATZIS | S18 |
|--------|---|-----|
| 10:00 | Experimental methods for train vibration forecasts Steinhauser, P.* | 532 |
| 10:20 | Influence of passing underground trains in Warsaw on the acoustic conditions in residential buildings located near the tunnels Niemas, M.* | 533 |
| 10:40 | Prototype barriers for trams and trains in urban environment: measurement campaign at Athens tram network Vogiatzis, C.* | 534 |
| 11:00 | Low-frequency noise radiated from a high-speed train running in an open section Takami, H.*; Kikuchi, K.; Iida, M.; Maekawa, H.; Kurita, K. | 535 |
| 11:20 | An experimental investigation into the influence of track crossovers on tram-generated ground-borne vibration and re-radiated noise Talbot, J.* | 536 |

| RS20-1 | Noise Control Elements Chairpersons: Z. HUNYADI, B. ROOZEN | S19 |
|--------|---|-----|
| 10:00 | Some numeric and experimental study of micro-perforated panel absorbers with heterogeneous cavity Jiang, W.*; Liu, X.; Wang, C. | 537 |
| 10:20 | The sound transmission loss of foam-filled honeycomb-core sandwich panels Zhou, R.*; Crocker, M.; Li, Z. | 538 |
| 10:40 | Comparison between experimental transmission loss measurement and theoretical models based on experimentally determined acoustic materials parameters Vanzo, P.*; Amadasi, G. | 539 |
| 11:00 | A silencer for an acoustic enclosure in a power transformer Lee, W.*; Lee, J.; Son, S. | 540 |
| 11:20 | A study of duct vent silencer Bauzer Medeiros, E.*; Campolina França, G.; Silveira, C. | 541 |
| 11:40 | On the design of Helmholtz resonators for damping pulsations in gas turbine combustion chambers Bellucci, V.*; Nowak, D.; Schuermans, B. | 542 |

12:00 **LUNCH**

13:30 – 14:20

| PS06 | Plenary Session 6 Chairperson: S. GERGES | AudiMax |
|-------|--|---------|
| 13:30 | Keynote Lecture Recent findings on our auditory system: it is very sensitive owing to the motility of sensory cells Wada H.* | 6 |

14:30 – 16:30

| | | | | | |
|---|--|-----|--|--|-----|
| <p>RS03-7 H1</p> <p>Active Noise and Vibration Control Chairpersons: T. BASTEN, B.M. GIBBS</p> | | | <p>RS06-2 H2</p> <p>Community and Environmental Noise Chairperson: C. HELLMICH</p> | | |
| 14:30 | Active vibration control of a rotor using a novel adaptive repetitive control algorithm Tammi, K.*; Höttönen, J.; Daley, S. | 543 | 14:30 | Acoustical characterisation of historical squares: a case study Marletta, L.; Evola, G.; Sicurella, F.* | 549 |
| 14:50 | Active vibration control of rotor-bearing systems using on-line algebraic identification of eccentricity Blanco-Ortega, A.*; Beltrán-Carbajal, F.; Silva-Navarro, G. | 544 | 14:50 | Environmental impact of industrial noise: a perceptual typology of permanent sources Le Nost, G.*; Viollon, S.; Marquis-Favre, C. | 550 |
| 15:10 | Semiactive balancing control of a Jeffcott-like rotor system supported on MR dampers Silva-Navarro, G.*; Amado-Cabrera, A. | 545 | 15:10 | New strategy for noise in Egypt El Bardisi, M.* | 551 |
| 15:30 | Optimal control of a rotating beam with tip rotor Chandiramani, N.*; Librescu, L. | 546 | 15:30 | Research on subjective noise in several hospitals of Buenos Aires city Ausejo, M.*; Recuero, M. | 552 |
| 15:50 | Adaptive-like active vibration suppression for a nonlinear mechanical system using on-line algebraic identification Beltrán-Carbajal, F.*; Silva-Navarro, G.; Sira-Ramírez, H. | 547 | 15:50 | Influence of events upon noise and air pollution Barbaro, S.*; Caracausi, R. | 553 |
| 16:10 | Evaluation of the autoperametric pendulum vibration absorber for nonlinear duffing systems Vázquez-González, B.*; Silva-Navarro, G. | 548 | 16:10 | Acoustical design of an electrical emergency plant using SEA method Podzharov, E.*; De la Mora Galvez, F.; Alvarez Sanchez, J. | 554 |
| <p>RS02-4 H3</p> <p>Acoustics and Vibration Theory Chairpersons: R. HEUER, E.M. SALOMONS</p> | | | <p>SS29-2 H4</p> <p>Elastic Waves in Solids and Structures Organisers: V. KRYLOV, S. SOROKIN</p> | | |
| 14:30 | Sound transmission loss model of curved multilayered panels Simon, F.* | 555 | 14:30 | Longitudinal guided waves in transversely isotropic circular cylindrical shells Honarvar, F.*; Safari, N.; Bazargan, M.; Enjilela, E. | 561 |
| 14:50 | Sound insulation of layered walls – comparison of experimental and theoretical results Godinho, L.*; Tadeu, A.; Santos, A. | 556 | 14:50 | On alternative theories for analysis of time harmonic behaviour of elastic plates with and without heavy fluid loading Sorokin, S.* | 562 |
| 15:10 | Research of acoustic characteristics stability of the stand for tests of the hydroequipment Berestovitsky, E.*; Gladilin, Y. | 557 | 15:10 | Flexural vibration band gaps in periodic plates with fluid loading Yu, D.*; Liu, Y.; Qiu, J.; Wen, J.; Zhao, H. | 563 |
| 15:30 | New designs for nutation gyroptic dampers Haji Ali Najar, M.; Sohrabian, M.*; Abedi, H. | 558 | 15:30 | Control of dispersion properties of normal electroelastic waves in cylindrical piezoelectric waveguides Puzyrev, V.* | 564 |
| 15:50 | A variable damping and stiffness semi-active vibration isolation system using magnetorheological fluid dampers Liu, Y.*; Matsuhisa, H.; Utsuno, H. | 559 | 15:50 | First experimental observation of the aquatic propulsion caused by localised flexural waves in immersed structures Krylov, V.*; Pritchard, G. | 565 |
| 16:10 | Physical mechanism behind the effect of vanishingly small damping on the stability bound of Beck's column Langthjem, M.*; Sugiyama, Y. | 560 | 16:10 | Mode behaviour in monolithic interface 2D arrays Kapelewski, J.*; Lila, B. | 566 |
| <p>SS09-3 H5</p> <p>Nonlinear Acoustics and Vibration Organiser: W. GAN</p> | | | <p>RS08-4 H6</p> <p>Condition Monitoring and Vibration Testing Chairpersons: E. KOZACZKA, A. TROHIDIS</p> | | |
| 14:30 | Egectors pulsating processes investigation Slobodkina, F.*; Evtukhin, A. | 567 | 14:30 | Some process of detection of cutting tool wear in high speed milling Mecheri, K.; Ouahabi, A.*; Serra, R.; Rmili, W. | 573 |
| 14:50 | Propagation of ultrasonic waves in isotropic materials under axial elastic stresses Si-Chaib, M.*; Djelouah, H.; Nour, A. | 568 | 14:50 | An experimental investigation of vertically vibrating aerostatic circular porous thrust bearings Jung, S.*; Lee, J.; Lee, S.; Ji, H.; Choi, H. | 574 |
| 15:10 | Acoustic streaming induced by a resonance of cylindrical wave Yano, T.* | 569 | 15:10 | Tool wear monitoring in turning process using vibration measurement Rmili, W.*; Serra, R.; Ouahabi, A.; Gontier, C. | 575 |
| 15:30 | Acoustical waves generated by a pulsating sphere with time-varying radius Lakhdar, G.* | 570 | 15:30 | Wear monitoring of a tool for marble cutting Bartolini, A.* | 576 |
| 15:50 | Axisymmetric nonlinear acoustic resonators: numerical analysis of the effect of the source Vanhille, C.*; Campos-Pozuelo, C. | 571 | 15:50 | Fault detection in slowly rotating large sized bearings Zvokelj, M.*; Zupan, S.; Kunc, R.; Prebil, I. | 577 |
| 16:10 | Nonlinear thermal vibration a thin laminate with thermal diffusion He, X.* | 572 | 16:10 | A threshold level approach to the detection of broken rotor bars in electrical-signal-based methods ShamsMosavi, S.*; Poshtan, J.; Zarei, J. | 578 |



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|--------|---|-----|--------|---|-----|
| SS23-2 | Modal Analysis Organiser: J. WASSERMANN | H7 | RS16-5 | Measurement Techniques Chairpersons: C. ADAM, H. WADA | H8 |
| 14:30 | Transverse modes of vibration in European church bells McLachlan, N.* | 579 | 14:30 | Study of relaxation modulus of soft elastic membrane Aoyagi, R.* | 585 |
| 14:50 | Operational modal analysis of a mobile substation during transport Devriendt, C.*; Guillaume, P.; Lopez-Roldan, J. | 580 | 14:50 | Dynamic characteristics analysis of turbine disk Zexia, H.*; Qin, S.; Feng, L.; Yonghua, T. | 586 |
| 15:10 | Direct methods versus modal methods in the identification of rigid body properties Maia, N.*; Almeida, R.; Urgueira, A. | 581 | 15:10 | The applying research on vibration and acceleration test using fiber optic sensors displacement measurement technique Yi, Z.*; Yong, W.; Jianzhong, H.; Rongjian, H.; Changchun, Z. | 587 |
| 15:30 | Vibration characteristics of the technical degradation process of an object Kazmierczak, H.; Cempel, C.; Pawlowski, T.*; Kromulski, J. | 582 | 15:30 | Application of the video camera measurements to experimental determination of the structural acoustic vector for vibrating plates Kozien, M.* | 588 |
| 15:50 | Operational modal analysis in the presence of unknown arbitrary loads using transmissibility measurements Devriendt, C.*; Guillaume, P. | 583 | 15:50 | The random-incidence sensitivity of measurement microphones Barrera-Figueroa, S.*; Rasmussen, K.; Jacobsen, F. | 589 |
| 16:10 | Operational modal analysis of a race-car using cyclostationarity with engine as excitation Hanson, D.*; Randall, B.; Antoni, J.; Ford, R. | 584 | 16:10 | Material effect on the performance of squeeze film dampers Ismail, G.*; Albagul, A.; Khalid, A.; Faris, W.; Hrair, M. | 590 |
| SS30-3 | Architectural Acoustics Organiser: J. KANG | S9 | SS38-1 | Numerical Methods in Acoustics Organiser: O. VON ESTORFF | S10 |
| 14:30 | Comparison of sound insulation prediction methods of lightweight partitions Prascevic, M.*; Cvetkovic, D.; Mihajlov, D. | 591 | 14:30 | Advanced features in computational acoustics Jerch, R.*; Kaltenbacher, M. | 597 |
| 14:50 | A study on floor impact noise Kim, H.*; Kim, B.; Cha, S.; Kim, Y. | 592 | 14:50 | A three dimensional finite element model for sound propagation in non potential mean flows Ben Tahar, M.; Beriot, H.* | 598 |
| 15:10 | Garage structure vibration transmission to human occupied spaces Evans, J.* | 593 | 15:10 | On the use of the multi-scale finite element method for calculating the acoustic response of double porosity material Amirouche, N.*; Bécot, F.; Sgard, F. | 599 |
| 15:30 | Airborne sound insulation and its subjective perception - how much makes a difference in loudness Neubauer, R.* | 594 | 15:30 | A finite element approach to the prediction of sound transmission through panels with acoustic resonators Hannink, M.*; Spiering, R.; Wijnant, Y.; de Boer, A. | 600 |
| 15:50 | Absorption based scaling method to predict steady-state broadband sound fields in reverberant enclosures Bliss, D.*; Rouse, J.; Franzoni, L. | 595 | 15:50 | Numerical modelling of sound radiation and transmission loss of a honeycomb panel using measured material properties Lippert, S.*; von Estorff, O. | 601 |
| 16:10 | The possibilities of application of inverse methods in acoustical analysis of sacral objects Kosala, K.*; Engel, Z.; Engel, J. | 596 | 16:10 | Infinite elements of variable order for exterior acoustic problems von Estorff, O.*; Petersen, S. | 602 |
| SS37-1 | Active Damping of Flexible Structures Organiser: M. KOZEK | S11 | RS25-3 | Signal Processing Chairpersons: A. CIOLFI, F. JACOBSEN | S12 |
| 14:30 | Semi-active damping of vibrations of mechanical structures with friction dampers Becker, J.*; Gaul, L. | 603 | 14:30 | Automatic gain control for the measurement of a flexible body motion using a Laser Doppler vibrometer Choi, H.*; Yeom, W.; Yoon, H.; Park, K. | 609 |
| 14:50 | Influence of Frahm's damping on the vibro-acoustic characteristics of a rotor structure Abdelkader, N.*; Nouredine, C.; M. Said, B.; M. Ouali, S. | 604 | 14:50 | Speech formant estimation using Hilbert-Huang transform Huang, H.*; Pan, J. | 610 |
| 15:10 | Optimisation of an electromagnetic feedback for active or passive damping and energy scavenging Foltete, E.*; Collet, M.; Mammosser, D. | 605 | 15:10 | An application of time-frequency signal analysis technique to estimate the impact mass on a plate type structure Choi, Y.*; Park, J. | 611 |
| 15:30 | A new sensing technology using piezoelectric film sensors for controlling multi-mode of vibration in flexible structures Seto, K.*; Nishikiori, M. | 606 | | | |
| 15:50 | Design and experimental validation of an optimal positioning criterion of strain sensors for plate structures Diaz, I.*; Pereira Gonzalez, E.; Lopez Cela, J.; Feliu Battle, V. | 607 | | | |
| 16:10 | Stabilization of a non-collocated active structural acoustic control on a clamped-free beam Aizpuru, A.*; Abete, J. | 608 | | | |

| RS15-2 | | S13 |
|---|--|-----|
| Machinery Noise and Vibration Control Chairpersons: D.J. INMAN, E. NIJMAN | | |
| 14:30 | Design and analysis of auto-balancer of an optical disk drive using rotational vibration absorbers Cheng, C.* | 612 |
| 14:50 | Isolation of vibrations transmitted to the operator of vibrating rollers used for compacting works Bratu, P.* | 613 |
| 15:10 | A broadband dynamic vibration absorber: optimal design and experimental assessment Kotinda, G.; Steffen Jr., V.; Rade, D.* | 614 |
| 15:30 | Influence of damping treatment on sound radiation Feng, L.* | 615 |
| 15:50 | A selective hydraulic damping valve Kroneld, P.; Liedes, T.; Nevala, K.; Marjanen, Y.* | 616 |
| 16:10 | Simple gear set dynamic transmission error measurements Tuma, J.* | 617 |

| SS02-1 | | S14 |
|---|---|-----|
| Noise and Vibration in Space Vehicles Organiser: H. OSMAN | | |
| 14:30 | Vibroacoustic environment prediction on detailed spacecraft models using reduction techniques Ngan, I.*; Santiago-Prowald, J.; Henriksen, T. | 618 |
| 14:50 | Controlling shock propagation in struts using cylindrical distributed vibration absorbers Johnson, M.*; Batton, B.; Osman, H.; Fuller, C. | 619 |
| 15:10 | Efficiency of sound radiation of cylindrical shells Alzahabi, B.* | 620 |
| 15:30 | Optimization of cylindrical shells using MSC.Nastran Alzahabi, B.* | 621 |
| 15:50 | Sound transmission through aircraft panels subjected to boundary layer pressure fluctuations Liu, B.* | 622 |
| 16:10 | A 2D analysis of active composite structures using plate elements for piezoelectric actuators Shaeri, N.*; Sadr Lahidjani, M.; Yousefi-Koma, A. | 623 |

| SS11-2 | | S15 |
|--|---|-----|
| Duct Acoustics and Mufflers Organisers: M. ABOM, H. BODEN, A. TORREGROSA | | |
| 14:30 | Experimental investigation of the acoustic effect of non-rigid walls in IC-engine intake systems Bodén, H.; Knutsson, M.*; Varma Nadampalli, R. | 624 |
| 14:50 | Acoustic modeling of a filter in the air cleaner box of engine intake system Ih, J.*; Kang, J. | 625 |
| 15:10 | Linear acoustic simulation and experimental characterisation of a modular automotive muffler Fairbrother, R.*; Abom, M.; Elnady, T.; Ollivier, F. | 627 |
| 15:30 | Acoustic modeling and testing of a complex car muffler Allam, S.*; Åbom, M. | 628 |
| 15:50 | Aeroacoustics of flow duct with multiple cavities Leung, R.*; So, R. | 629 |

| SS13-1 | | S16 |
|---|---|-----|
| Soil Vibrations by Infrastructure Organiser: H. STUIT | | |
| 14:30 | A review of strategies to control manmade induced ground vibrations Rahman, M.*; Orr, T. | 630 |
| 14:50 | Vibrations from the tunnel boring machine in soft soil Gardien, W.* | 631 |
| 15:10 | A parametric study of backfill trench for reduction of TBM induced ground vibrations Rahman, M.*; Orr, T. | 632 |
| 15:30 | Traffic induced ground vibrations from viaduct: prediction and mitigation procedures Takemiya, H.*; Chen, F.; Shimabuku, J. | 633 |
| 15:50 | Stiffness requirements for slab track railways: soil improvement versus slab reinforcement, and effects on dynamic response Steenbergen, M.*; Metrikine, A. | 635 |

| SS33-2 | | S17 |
|---|--|-----|
| Noise Mapping & GIS Organiser: G. LICITRA | | |
| 14:30 | Input data preparation for noise mapping according to the European directive on environmental noise Licitra, G.*; Chiari, C.; Iacoponi, A.; Paviotti, M.; Memoli, G. | 636 |
| 14:50 | Noise mapping with GIS - managing uncertainty helps promote quality Shilton, S.*; Stapelfeldt, H. | 637 |
| 15:10 | Simplified mapping algorithm for fast surveys, requiring minimal input data Farina, A.*; Galaverna, P.; Truffelli, G. | 638 |
| 15:30 | Use of remote sensing data in noise mapping – a case study for Leicester, UK Goodman, P.*; Skelton, P.; Bell, M. | 639 |
| 15:50 | Methodology for spatial classification of transport routes in the view of their impact on the acoustic climate of the environment Kompala, J.*; Lipowczan, A. | 640 |
| 16:10 | Noise mapping and impact analysis in GIS Sivertun, Å.; Gumos, A.* | 641 |

| SS20-2 | | S18 |
|---|--|-----|
| Environmental Noise & Vibration From Urban Transportation Organiser: C. VOGIATZIS | | |
| 14:30 | Long term environmental & transportation noise monitoring in the cities of Veria & Ioannina in Northern Greece according to the 2002/49/EC directive Vassiliadis, V.*; Tzekakis, E.; Vogiatzis, C. | 642 |
| 14:50 | Application of a combined wavenumber finite and boundary element method to noise radiation from embedded track Nilsson, C.*; Jones, C. | 643 |
| 15:10 | Acoustic waves emanating from transitional structures in a compressible boundary-layer for high-speed train Watanabe, D.*; Takami, H.; Maekawa, H.; Suzuki, H.; Iida, M. | 644 |
| 15:30 | Optimization of the acoustic performance of T-shaped noise barriers with a reactive top surface Baulac, M.*; Defrance, J.; Jean, P. | 645 |
| 15:50 | Measurement of noise in ultrasonic frequency range in traffics and environments Masuzawa, N.; Fukahori, K.* | 646 |



| RS20-2 | Noise Control Elements Chairpersons: Z. HUNYADI, B. ROOZEN | S19 |
|--------|--|-----|
| 14:30 | Performance evaluation of spherical reflector in suppressing supersonic jet noise field: noise control Khan, M.*; Seto, K.; Teramoto, K. | 647 |
| 14:50 | An approach to the solution of the problem of noise pollution at the social living spaces in Trabzon Demirel, Ö. *; Barlı, Ö.; Yaşar, Y.; Özdemir, B.; Sarıkoç, E. | 648 |
| 15:10 | Acoustical optimization of a roller blind box Asdrubali, F.*; Pispola, G. | 649 |
| 15:30 | Conditions of excitation of sound for condensed and gas fuels Samsonov, V.*; Murunov, E. | 650 |
| 15:50 | Prediction and design of noise barriers for stationary noise sources Tyurina, N.* | 651 |

16:30 **COFFEE BREAK**

17:00 – 19:00

| RS03-8 | Active Noise and Vibration Control Chairpersons: T. BASTEN, B.M. GIBBS | H1 |
|--------|--|-----|
| 17:00 | A study of the pressure oscillation in a supersonic cavity flow and its control Kim, H.; Lim, C.*; Lee, Y. | 652 |
| 17:20 | Experimental investigations of different microphone installations for active noise control in ducts Larsson, M.*; Johansson, S.; Håkansson, L.; Claesson, I. | 653 |
| 17:40 | Stabilized multi-channel IIR filters for active control of noise in a duct Nam, H.*; Suh, S.; Yoon, K.; Ahn, D. | 654 |
| 18:00 | Active control of high frequency vibration in uncertain structures Gani, A.*; Langley, R. | 655 |
| 18:20 | Closed-loop control of flow-induced noise using a perturbation technique Ming Ming, Z.; Li, C.*; Yu, Z. | 656 |

| RS23-1 | Occupational Noise Chairpersons: P. BOREJKO, I. DOMBI | H2 |
|--------|---|-----|
| 17:00 | Utilization of silencers to reduce the personal noise exposure in work environment Costescu, M.*; Platon, S. | 657 |
| 17:20 | Floor impact noise reduction effect of polyester felt Jang, J.*; Jung, M.; Lee, Y.; Hwang, Y. | 658 |
| 17:40 | Noise maps: a tool for the demarcation of risk areas of noise exposure in the surface mining industry Pavón, I.*; Recuero, M. | 659 |
| 18:00 | The safety issues of intense airborne ultrasound: parametric array loudspeaker Tan, A.*; Tanaka, N. | 660 |
| 18:20 | Experimental study of ototoxic interaction of styrene and furosemide in the Guinea Pig Morioka, I.*; Minami, Y.; Yamamoto, H.; Kawai, T.; Miyashita, K. | 661 |

| RS02-5 | Acoustics and Vibration Theory Chairpersons: R. HEUER, E.M. SALOMONS | H3 |
|--------|---|-----|
| 17:00 | Numerical study of sound generation by vortex induced flexible wall vibration Zheng, T.*; Tang, S.; Shen, W. | 662 |
| 17:20 | Lateral vibration of rotor-bearing system with flexible coupling and parallel offset Huang, S.*; Tsai, C. | 663 |
| 17:40 | Rotating shaft analytical response in adimensional form Fayos, J.; Rovira, A.*; Baeza, L.; Carballeira, J. | 664 |
| 18:00 | New approximation of structure-external acoustic interactions, part I: model derivation Park, K.*; Lee, M.; Park, Y. | 665 |
| 18:20 | New approximation of structure-external acoustic interactions, part II: model evaluation Park, K.; Lee, M.*; Park, Y. | 666 |

| SS29-3 | Elastic Waves in Solids and Structures Organisers: V. KRYLOV, S. SOROKIN | H4 |
|--------|--|-----|
| 17:00 | Spectral element and experimental analysis of light-weight sandwich structures Bonfiglio, P.*; Peplow, A.; Nilsson, A.; Pompoli, F. | 667 |
| 17:20 | Effect of cross-coupling on the injection of vibratory power from sets of point forces into a periodic support structure Ohlrich, M.*; Friis, L. | 668 |
| 17:40 | Wave propagation in drilling boreholes Rashed, G.*; Ghajar, R.; Hashemi, S. | 669 |
| 18:00 | Thermodynamic shock characterization of the super-alloy Abdelkader, N.*; Youcef, O.; Nouredine, C.; Abderrahmane, S. | 670 |
| 18:20 | Acoustic non-linearity, pseudo-elasticity and anisotropy of ferromagnetic Heusler alloys with shape memory Koledov, V.; Kostiuk, D.; Kuzavko, Y.; Shavrov, V.* | 671 |

| SS09-4 | | H5 |
|--|--|-----|
| Nonlinear Acoustics and Vibration Organiser: W. GAN | | |
| 17:00 | Soft-ratchet paradigm in the nonclassical nonlinear dynamics of rocks Vakhnenko, O.*; Vakhnenko, V.; Shankland, T.; Ten Cate, J. | 672 |
| 17:20 | Resonant frequencies of nonlinear output frequency response functions Peng, Z.*; Lang, Z.; Billings, S.; Lu, Y. | 673 |
| 17:40 | Experimental and theoretical investigation of vibrational convection in Hele-Shaw cell Babushkin, I.; Demin, V.* | 674 |
| 18:00 | Bifurcations analysis of a flexible rotor in squeeze-film dampers with retainer springs Inayat-Hussain, J.* | 675 |
| 18:20 | Vibrations of nonlinear structures using structural coupling method Kim, D.; Han, J.* | 676 |

| RS08-5 | | H6 |
|--|---|-----|
| Condition Monitoring and Vibration Testing Chairpersons: E. KOZACZKA, A. TROHIDIS | | |
| 17:00 | Shock monitoring technology for reciprocating machinery Zusman, G.* | 677 |
| 17:20 | Drill wear monitoring based on measured instantaneous angular speed Heyns, S.*; Sambayi, P. | 678 |
| 17:40 | Damage detection in beams using time-frequency analysis of transient flexural waves Trochidis, A.*; Apostoloudia, A.; Douka, E.; Hadjileontiadis, L.; Rekanos, I. | 679 |
| 18:00 | A novel method for the detection of leakage and blockage in pipelines Papadopoulou, K.*; Glover, D.; Lennox, B.; McKay, D.; Taylor, A.; Turner, J.T. | 680 |
| 18:20 | Sonic pressure vessel sensor Tittmann, B.* | 681 |

| SS23-3 | | H7 |
|--|--|-----|
| Modal Analysis Organiser: J. WASSERMANN | | |
| 17:00 | Modal detection for non-uniform beams using continuous and discrete strain sensors Anthony, D.* | 682 |
| 17:20 | Experimental modal analysis of a scaled car body for metro vehicles Popprath, S.*; Benatzky, C.; Bilik, M.; Kozek, M.; Striberky, A.; Wassermann, J. | 683 |
| 17:40 | Preparation for the validation of a simple elevator model Isasa, I.*; Pagalday, J.; Abete, J.; Sagartzazu, X.; Cogan, S. | 684 |
| 18:00 | Dynamic properties assessment and updating of large diesel ship engines Pestelli, C.*; Palloni, F.; Bregant, L.; Castellani, F. | 685 |
| 18:20 | Dynamic behaviour of flat post-tensioned concrete floors Jetann, C.*; Thambiratnam, D.; Kajewski, S. | 686 |
| 18:40 | Effective models of civil structures in dynamics based on measurement and optimization Rosko, P.* | 687 |

| RS16-6 | | H8 |
|--|--|-----|
| Measurement Techniques Chairpersons: C. ADAM, H. WADA | | |
| 17:00 | A PZT-coated cantilever transducer for simultaneous sensing and actuating in dynamic testing of structures Ling, S.*; Wang, D. | 688 |
| 17:20 | Determination of the thickness-shear resonance frequency for piezoelectric accelerometers using the KLM model Ursu, M.* | 689 |
| 17:40 | Non destructive characterization of steels carbon rate by ultrasounds Badidi Bouda, A.*; Halimi, R.; Benzohra, M.; Lebaili, S. | 690 |

| SS03-1 | | S9 |
|---|--|-----|
| Acoustic Materials and Their Characterisation Organisers: K. HOROSHENKOV, F. POMPOLI | | |
| 17:00 | Automatic characterisation of ground surfaces from in situ measurements Dutilleul, G.; Ecotière, D.* | 691 |
| 17:20 | An hybrid p-u probe for the study of acoustical properties of materials with sound intensity Bonfiglio, P.; Prodi, N.*; Pompoli, F. | 692 |
| 17:40 | Determining acoustic properties of open-cell metal foams using the multi-microphone transfer matrix method Neunert, U.*; Kathan, R.; Sattelmayer, T. | 693 |
| 18:00 | Reproducibility experiments on measuring acoustical and related non-acoustical parameters of porous media (round-robin tests) Horoshenkov, K.*; Khan, A.; Sgard, F.; Bécot, F.; Jaouen, L.; Renaud, A.; Amirouche, N.; Hübel, J. | 694 |
| 18:20 | Quantification of the uncertainty of measurement of the normal incidence absorption coefficient Ramis Soriano, J.*; Alba Fernández, J.; Juliá Sanchis, E.; Escuder Silla, E. | 695 |

| SS38-2 | | S10 |
|---|---|-----|
| Numerical Methods in Acoustics Organiser: O. VON ESTORFF | | |
| 17:00 | Fast boundary integral solution for acoustic scattering by large objects Rath-Spivack, O.*; Spivack, M. | 696 |
| 17:20 | High frequency broadband energy-intensity boundary element method for specular reflection in three-dimensional reverberant enclosures Rouse, J.*; Franzoni, L.; Bliss, D. | 697 |
| 17:40 | Fast and accurate solution of the Helmholtz equation Sergej, R.* | 698 |
| 18:00 | A combined Helmholtz integral equation – Fourier series formulation of acoustical radiation and scattering problems Shatalov, M.*; Fedotov, I.; Nicalaides, K. | 699 |
| 18:20 | BEM calculation of acoustic wave localized in 2-dimensional random field Tsuru, H.*; Ishizuka, T.; Ohtuki, T. | 700 |



| SS37-2 | | S11 |
|--|--|-----|
| Active Damping of Flexible Structures Organiser: M. KOZEK | | |
| 17:00 | Active damping of a quadratic plate for a non-collocated disturbance Kozek, M.*; Gusenbauer, M.; Höftberger, F. | 701 |
| 17:20 | Adaptive semi-active vibration control in case with uncertainties in MR damper and structure Sano, A.*; Terasawa, T. | 702 |
| 17:40 | Combination of set membership and model error modeling approaches for robust identification of a laboratorial lightly damped flexible beam Esmail Sabzali, H.*; Montazeri, A.; Poshtan, J.; JahedMotlagh, M. | 703 |
| 18:00 | Comparison of deterministic and stochastic methods for robust identification of a lightly damped flexible beam Montazeri, A.*; Esmailsabzali, H.; Poshtan, J. | 704 |

| SS31-1 | | S12 |
|---|--|-----|
| Architecture and Urban Sounds Organisers: B. HELLSTRÖM, C. DYRSSEN, B. HELLSTRÖM | | |
| 17:00 | Acoustic design in commercial space Hellström, B.* | 705 |
| 17:20 | The 'sonic space' in architecture: the need of taking into account sound as an essential component of the architectural space Rodriguez, F.* | 706 |
| 17:40 | Toward a method for documentation & analysis of transitional soundspace – part II Thompson, D.* | 707 |
| 18:00 | An acoustical palette for urban design Siebein, G.*; Kwon, Y.; Smitthakorn, P.; Gold, M. | 708 |
| 18:20 | The use of visual and acoustic stimuli in landscape management and planning Pheasant, R.*; Barrett, B.; Horoshenkov, K.; Watts, G. | 709 |

| RS15-3 | | S13 |
|--|---|-----|
| Machinery Noise and Vibration Control Chairpersons: D.J. INMAN, E. NIJMAN | | |
| 17:00 | Reduction of noise and vibration in gear drives Fuentes-Aznar, A.*; Gonzalez-Peres, I.; Litvin, F.; Hayasaka, K.; Yukishima, K. | 710 |
| 17:20 | A novel design of smart torque motor using shape memory alloy (SMA) Rakhsha, R.*; Yousefi Koma, A. | 711 |
| 17:40 | Experimental studies of sound generated by automotive brakes Szary, M.*; Filip, P. | 712 |
| 18:00 | On-line identification of rotordynamics in a simulation environment and in a rotor test rig Hyyryläinen, J.* | 713 |
| 18:20 | Passive self-balancing for rotor system with two non-identical pendulums Horvath, R.; Flowers, G.* | 714 |

| SS02-2 | | S14 |
|--|--|-----|
| Noise and Vibration in Space Vehicles Organiser: H. OSMAN | | |
| 17:00 | Development of space boom for micro-satellite: design of hinge and dynamics of boom Sugiyama, Y.; Shirako, M.*; Araki, K.; Honda, H.; Nakamura, Y.; Kobayashi, C. | 715 |
| 17:20 | Development of space boom for micro-satellite: design of pin-puller and vibration test Sugiyama, Y.; Araki, K.*; Shirako, M.; Honda, H.; Nakamura, Y.; Kobayashi, C. | 716 |

| SS11-3 | | S15 |
|---|---|-----|
| Duct Acoustics and Mufflers Organisers: M. ABOM, H. BODEN, A. TORREGROSA | | |
| 17:00 | Analysis of wave propagation in fluid-filled viscoelastic pipes Prek, M.* | 717 |
| 17:20 | Novel sound attenuating ducts utilizing spatially periodic area changes with absorbing material Bliss, D.*; Danilov, P.; Burton, L.; Nesbitt, J. | 718 |
| 17:40 | Over-determination in acoustic two-port data measurement Allam, S.*; Bodén, H.; Åbom, M. | 719 |
| 18:00 | New calibration method for the two microphone transfer function method to measure acoustical impedance in a wide frequency range Boonen, R.; Sas, P.; Desmet, W.* | 720 |
| 18:20 | Measurement of acoustic intensity in ducts with hot turbulent gas flows Nilsson, E.* | 721 |

| SS07-1 | | S16 |
|---|--|-----|
| Active Control of Noise and Vibrations in Practical System Implementations Organisers: S. JOHANSSON, M. WINDBERG | | |
| 17:00 | Modeling and control of ionic polymer-metal composite structures Yousefi Koma, A.*; Fazeli, R. | 722 |
| 17:20 | Experimental results of active longitudinal vibration control on a helicopter gearbox strut Forghieri, A.*; Dozio, L.; Ghiringhelli, G. | 723 |
| 17:40 | Analysis and rejection of out of plane moving web vibrations in web handling systems Vedrine, M.*; Knittel, D. | 724 |
| 18:00 | Active vibration control of a slender cantilever using distributed piezoelectric patches Nader, M.*; Kaltenbacher, M.; Krommer, M.; Von Garssen, H.; Lerch, R. | 725 |
| 18:20 | Control design for hard mount vibration isolation in high-precision machinery Van Der Poel, T.*; Van Dijk, J.; Jonker, J.; Soemers, H. | 726 |

| RS31-1 | Vibro-Acoustics and Shock Excitation Chairpersons: J.-L. GUYADER, M. PETYT | S17 |
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| 17:00 | Vibro - acoustic low frequency analysis of the VLS equipment bay using finite elements D'Andrade Souto, C.*; Pirk, R. | 727 |
| 17:20 | A symmetric modal reduction method for coupled structure-acoustic finite element models D'Andrade Souto, C.*; Pavanello, R. | 728 |
| 17:40 | Vibration and sound field analysis of a holed plate subjected to a rotating sound source Huang, Y.*; Hsu, R. | 729 |
| 18:00 | Some properties of the energy flow corresponding to flexural waves in sandwich beam structures Backström, D.*; Nilsson, A. | 730 |
| 18:20 | Using shock excitation in condition monitoring of prestressed structures Radkowski, S.; Szczurowski, K.; Galezia, A.* | 731 |

| SS04-1 | Acoustic Signal Processing Organisers: A. IKUTA, M. OHTA | S18 |
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| 17:00 | A state estimation method for sound environment system with uncertainty by introducing fuzzy inference Ikuta, A.*; Ohta, M. | 732 |
| 17:20 | Acoustic blind source separation based on the particle velocity vector measurement Teramoto, K.*; Khan, M. | 733 |
| 17:40 | Multi-wavelet detection and denoising of low frequency chirp signals using adaptive wavelet methods Wheatley, J.* | 734 |
| 18:00 | Independent component analysis for 3-dimensional complex signals due to 3-dimensional unitary transformation - maximization of evaluation function based on complex Hermite moment Nakasako, N.*; Ogura, H.; Nakamura, S.; Yamamoto, D. | 735 |
| 18:20 | The principles of coin-tap method of non-destructive testing Kim, S.* | 736 |