

8th Edoardo Amaldi Conference on Gravitational Waves 2009

Journal of Physics: Conference Series Volume 228

**New York, New York, USA
21-26 June 2009**

**ISBN: 978-1-61738-798-2
ISSN: 1742-6588**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (200;) by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

012001: Astronomy's New Messengers: A Traveling Exhibit to Reach Out to a Young Adult Audience	1
<i>Marcò Cavaglià, Martin Hendry, Szabolcs Márka, David H. Reitze, Keith Riles</i>	
012002: LIGO-Virgo Searches for Gravitational Waves from Coalescing Binaries: A Status Update	6
<i>Anand S. Sengupta</i>	
012003: Recovering a Spinning Inspiralling Compact Binary Waveform Immersed in LIGO-like Noise with Spinning Templates.....	11
<i>László Veréb, Zoltán Keresztes, Péter Raffai, Szabolcs Mészáros, László Á. Gergely</i>	
012004: Hierarchical Hough All-Sky Search for Periodic Gravitational Waves in LIGO S5 Data.....	17
<i>Llucia Sancho de la Jordana</i>	
012005: Searching for Gravitational Waves from Pulsars in Binary Systems: An All-Sky Search.....	24
<i>S. van der Putten, H. J. Bulten, J. F. J. van den Brand, M. Holtrop</i>	
012006: Using a Cleaning Technique for the Search of Continuous Gravitational Waves in LIGO Data.....	32
<i>Paola Leaci, P. Astone, Maria Alessandra Papa, S. Frasca</i>	
012007: Searching for Monochromatic Signals in the ALLEGRO Gravitational Wave Detector Data.....	39
<i>C. Frajca, R. Pires, F. S. Bortoli, R. F. Melo, N. S. Magalhaes, R. M. Marinho Jr, F. G. Oliveira, O. D. Aguiar, W. W. Johnson</i>	
012008: Random Template Placement and Prior Information.....	44
<i>Christian Röver</i>	
012009: Confusion Background from Compact Binaries.....	51
<i>T. Regimbau, Scott A. Hughes</i>	
012010: Nested Sampling as a Tool for LISA Data Analysis.....	56
<i>Jonathan R. Gair, Farhan Feroz, Stanislav Babak, Philip Graff, Michael P. Hobson, Antoine Petiteau, Edward K. Porter</i>	
012011: A Physical Criterion for Validating the Method Used to Design Mechanical Impedance Matchers for Mario Schenberg's Transducers.....	62
<i>F. S. Bortoli, C. Frajca, N. S. Magalhaes, E. N. Duarte</i>	
012012: The Upgrade of GEO 600	68
<i>H. Lück, C. Affeldt, J. Degallaix, A. Freise, H. Grote, M. Hewitson, S. Hild, J. Leong, M. Prijatelly, K. Strain, B. Willke, H. Wittel, K. Danzmann</i>	
012013: Commissioning of the Tuned DC Readout at GEO 600	77
<i>J. Degallaix, H. Grote, M. Prijatelly, M. Hewitson, S. Hild, C. Affeldt, A. Freise, J. Leong, H. Lück, K. Strain, H. Wittel, B. Willke, K. Danzmann</i>	
012014: Control and Automatic Alignment of the Output Mode Cleaner of GEO 600	85
<i>M. Prijatelly, H. Grote, J. Degallaix, M. Hewitson, S. Hild, C. Affeldt, A. Freise, J. Leong, H. Lück, K. Strain, H. Wittel, B. Willke, K. Danzmann</i>	
012015: Virgo Calibration and Reconstruction of the Gravitationnal Wave Strain During VSR1	92
<i>T. Accadia, F. Acerneese, F. Antonucci, S. Aoudia, K. G. Arun, P. Astone, G. Ballardin, F. Barone, M. Barsuglia, Th. S. Bauer, M. G. Beker, A. Belletoile, S. Bigotta, S. Birindelli, M. Bitossi, M. A. Bizouard, M. Blom, C. Boccara, F. Bondi, L. Bonelli, R. Bonnand, L. Bosi, S. Braccini, C. Bradaschia, A. Brillet, V. Brisson, R. Budzyński, T. Bulik, H. J. Bulten, D. Buskulic, C. Buy, G. Cagnoli, E. Campagna, B. Canuel, F. Carbognani, F. Cavalier, R. Cavalier, G. Cella, E. Cesarini, E. Chassande-Mottin, A. Chincarini, F. Cleva, E. Coccia, C. N. Colacino, J. Colas, A. Colla, M. Colombini, A. Corsi, J.-P. Coulon, E. Cuoco, S. D'Antonio, A. Dari, V. Dattilo, M. Davier, R. Day, R. De Rosa, M. del Prete, L. Di Fiore, A. Di Lieto, M. Di Paolo Emilio, A. Di Virgilio, A. Dietz, M. Drago, V. Fafone, I. Ferrante, F. Fidecaro, I. Fiori, R. Flaminio, J.-D. Fournier, J. Franc, S. Frasca, F. Frasconi, A. Freise, M. Galimberti, L. Gammaitonni, F. Garufi, G. Gemme, E. Genin, A. Gennai, A. Giazotto, R. Gouaty, M. Granata, C. Greverie, G. M. Guidi, H. Heitmann, P. Hello, S. Hild, D. Huet, P. Jaradowski, I. Kowalska, A. Królak, N. Leroy, N. Letendre, T. G. F. Li, M. Lorenzini, V. Loriette, G. Losurdo, J. M. Mackowski, E. Majorana, I. Maksimovic, N. Man, M. Mantovani, F. Marchesoni, F. Marion, J. Marque, F. Martelli, A. Masserot, C. Michel, L. Milano, Y. Minenkov, M. Mohan, J. Moreau, N. Morgado, A. Morgia, S. Mosca, V. Moscatelli, B. Mouris, I. Neri, F. Nocera, G. Pagliaroli, L. Palladino, C. Palomba, F. Paoletti, S. Pardi, M. Parisi, A. Pasqualetti, R. Passaquieti, D. Passuello, G. Persichetti, M. Pichot, F. Piergiovanni, M. Pietka, L. Pinard, R. Poggiani, M. Prato, G. A. Prodi, M. Punturo, P. Puppo, O. Rabaste, D. S. Rabeling, P. Rapagnani, V. Re, T. Regimbau, F. Ricci, F. Robinet, A. Rocchi, L. Rolland, R. Romano, D. Rosińska, P. Ruggi, B. Sassolas, D. Sentenac, R. Sturani, B. Swinkels, A. Toncelli, M. Tonelli, O. Torre, E. Tournefier, F. Travassos, J. Trummer, G. Vajente, J. F. J. van den Brand, S. van der Putten, M. Vavoulidis, G. Vedovato, D. Verkindt, F. Vetrano, A. Viceré, J.-Y. Vinet, H. Vocca, M. Was, M. Yvert</i>	
012016: Design of the Advanced Virgo Non-Degenerate Recycling Cavities.....	100
<i>M. Granata, M. Barsuglia, R. Flaminio, A. Freise, S. Hild, J. Marque</i>	

012017: The Dynamics of Monolithic Suspensions for Advanced Detectors: A 3-Segment Model	107
<i>F. Piergiovanni, M. Lorenzini, G. Cagnoli, E. Campagna, E. Cesarini, G. Losurdo, F. Martelli, F. Vetrano, A. Viceré</i>	
012018: Characterization of Electrostatic Actuators for Suspended Mirror Control with Modulated Bias	114
<i>R. De Rosa, F. Garufi, L. Milano, S. Mosca, G. Persichetti</i>	
012019: Silicate Bonding Properties: Investigation Through Thermal Conductivity Measurements	121
<i>M. Lorenzini, E. Cesarini, G. Cagnoli, E. Campagna, K. Haughian, J. Hough, G. Losurdo, F. Martelli, I. Martin, F. Piergiovanni, S. Reid, S. Rowan, A. A. van Veggel, F. Vetrano</i>	
012020: Multitechnique Investigation of Ta_2O_5 Films on SiO_2 Substrates: Comparison of Optical, Chemical and Morphological Properties	127
<i>M. Prato, E. Cesarini, M. Lorenzini, A. Chincarini, G. Cagnoli, M. Canepa, F. Vetrano, G. Gemme</i>	
012021: OSCAR a Matlab Based Optical FFT Code	133
<i>J. Degallaix</i>	
012022: Lateral Input-Optic Displacement in a Diffractive Fabry-Perot Cavity	140
<i>J. Hallam, S. Chelkowski, A. Freise, B. W. Barr, S. Hild, K. Strain, O. Burmeister, R. Schnabel</i>	
012023: Quantum Limit of Different Laser Power Stabilization Schemes Involving Optical Resonators	149
<i>P. Kwee, B. Willke, K. Danzmann</i>	
012024: Optomechanical Correlations and Signal Self-Amplification in Interferometric Measurements	155
<i>P.-F. Cohadon, P. Verlot, A. Tavernarakis, T. Briant, A. Heidmann</i>	
012025: Study of Three-Mode Parametric Instability	161
<i>Fengchao Liang, Chunlong Zhao, Slawomir Gras, Li Ju, D. G. Blair</i>	
012026: Noise Cancellation Properties of Displacement Noise Free Interferometer	168
<i>S. Sato, S. Kawamura, Atsushi Nishizawa, Y. Chen</i>	
012027: Towards a Suspension Platform Interferometer for the AEI 10 m Prototype Interferometer	173
<i>K. Dahl, A. Bertolini, M. Born, Y. Chen, D. Gering, S. Goßler, C. Gräf, G. Heinzel, S. Hild, F. Kawazoe, O. Kranz, G. Kühn, H. Lück, K. Mossavi, R. Schnabel, K. Somiya, K. Strain, J. R. Taylor, A. Wanner, T. Westphal, B. Willke, K. Danzmann</i>	
012028: Designs of the Frequency Reference Cavity for the AEI 10 M Prototype Interferometer	178
<i>F. Kawazoe, J. R. Taylor, A. Bertolini, M. Born, Y. Chen, Katrin Dahl, D. Gering, S. Goßler, Christian Gräf, G. Heinzel, S. Hild, O. Kranz, G. Kühn, H. Lück, K. Mossavi, R. Schnabel, K. Somiya, K. Strain, A. r Wanner, T. Westphal, B. Willke, K. Danzmann</i>	
012029: Building Blocks for Future Detectors: Silicon Test Masses and 1550 nm Laser Light	184
<i>R. Schnabel, M. Britzger, F. Brückner, O. Burmeister, K. Danzmann, J. Duck, T. Eberle, D. Friedrich, H. Lück, M. Mehmet, R. Nawrodt, S. Steinlechner, B. Willke</i>	
012030: Preliminary Results on the Cryogenic Payload for the 3rd Generation GW Interferometers	191
<i>F. Basti, F. Frasconi, M. Granata, E. Majorana, V. Moscatelli, L. Naticchioni, M. Perciballi, P. Puppo, P. Rapagnani, F. Ricci</i>	
012031: A Thermal Noise Model for a Branched System of Harmonic Oscillators	196
<i>P. Puppo</i>	
012032: Potential Mechanical Loss Mechanisms in Bulk Materials for Future Gravitational Wave Detectors	203
<i>D. Heinert, A. Grib, K. Haughian, J. Hough, S. Kroker, P. Murray, R. Nawrodt, S. Rowan, C. Schwarz, P. Seidel, A. Tünnermann</i>	
012033: Anomalous Low Frequency Dissipation Processes in Metal Springs	209
<i>Riccardo DeSalvo, Arianna DiCintio, F. Marchesoni, Abhik Bhawal</i>	
012034: Towards Time Domain Finite Element Analysis of Gravity Gradient Noise	219
<i>M. G. Beker, J. F. J. van den Brand, E. Hennes, D. S. Rabeling</i>	
012035: Tunable Mechanical Monolithic Horizontal Sensor with High Q for Low Frequency Seismic Noise Measurement	225
<i>F. Acerne, R. De Rosa, F. Garufi, Gerardo Giordano, R. Romano, F. Barone</i>	
012036: Long Term Seismic Noise Acquisition and Analysis in the Homestake Mine with Tunable Monolithic Sensors	231
<i>F. Acerne, R. De Rosa, Riccardo De Salvo, F. Garufi, Gerardo Giordano, Jan Harms, Vuk Mandic, Angelo Sajeva, Thomas Trancynger, F. Barone</i>	
012037: The 2 Degrees of Freedom Facility in Firenze for the Study of Weak Forces	237
<i>L. Marconi, R. Stanga, M. Lorenzini, C. Grimani, M. Bassan, G. Pucacco, L. Di Fiore, R. De Rosa, F. Garufi, L. Milano</i>	
012038: The Magnetic Diagnostics Subsystem of the LISA Technology Package	243
<i>M. Diaz-Aguiló, E. García-Berro, A. Lobo, N. Mateos, J. Sanjuán</i>	

012039: Proton Irradiation Test on the Flight Model Radiation Monitor for LISA Pathfinder	249
<i>I. Mateos, A. Lobo, J. Ramos-Castro, J. Sanjuán, M. Díaz-Aguiló, P. J. Wass, C. Grimani</i>	
012040: Short-Term Forecasting of Solar Energetic Ions on Board LISA	255
<i>C. Grimani, H. M. Araújo, M. Fabi, N. Finetti, A. Lobo, I. Mateos, D. N. A. Shaul, T. J. Sumner</i>	
012041: ADC Non-Linear Error Corrections for Low-Noise Temperature Measurements in the LISA Band	263
<i>J. Sanjuán, A. Lobo, J. Ramos-Castro, N. Mateos, M. Díaz-Aguiló</i>	
012042: Fiber Modulators and Fiber Amplifiers for LISA	270
<i>M. Tröbs, S. Barke, J. Möbius, M. Engelbrecht, Th. Theeg, D. Kracht, B. Sheard, G. Heinzel, K. Danzmann</i>	
012043: Fiber Laser Development for LISA	276
<i>Kenji Numata, Jeffrey R. Chen, Jordan Camp</i>	
012044: Arm Locking with Doppler Estimation Errors	282
<i>Yinan Yu, Vinzenz Wand, Shawn Mitryk, Guido Mueller</i>	
012045: Ranging and Phase Measurement for LISA	293
<i>Juan José Esteban, Antonio F. García, Johannes Eichholz, Antonio M. Peinado, Iouri Bykov, G. Heinzel, K. Danzmann</i>	
012046: Test-Mass Module for DECIGO Pathfinder	300
<i>S. Sato, Y. Torii, Y. Wakabayashi, Y. Ejiri, R. Suzuki, A. Ueda, S. Kawamura, A. Araya, M. Ando, Y. Obuchi, N. Okada</i>	
012047: Structural Design and Analysis of Test Mass Module for DECIGO Pathfinder	305
<i>Y. Wakabayashi, Y. Obuchi, N. Okada, Y. Torii, Y. Ejiri, R. Suzuki, A. Ueda, S. Kawamura, A. Araya, M. Ando, S. Sato, A. Sugamoto</i>	
012048: Geophysical Constraint on a Relic Background of the Dilatons	311
<i>Sachie Shiomi</i>	
012049: Effect of Spin Precession on Bounding the Mass of the Graviton Using Gravitational Waves from Massive Black Hole Binaries	317
<i>A. Stavridis, C. M. Will</i>	
012050: The Importance of Precession in Modelling the Direction of the Final Spin from a Black-Hole Merger	322
<i>Enrico Barausse</i>	
012051: Testing Effective Quantum Gravity with Gravitational Waves from Extreme Mass Ratio Inspirals	328
<i>N. Yunes, C. F. Sopuerta</i>	
012052: Relativistic Orbits and Gravitational Waves from Gravitomagnetic Corrections	337
<i>F. Garufi, S. Capozziello, M. De Laurentis, L. Forte, L. Milano</i>	
012053: Secular Momentum Transport by Gravitational Waves from Spinning Compact Binaries	343
<i>Zoltán Keresztes, Balázs Mikóczi, László Á. Gergely, Mátyás Vasúth</i>	
012054: Gravitational Waves and Cosmological Back Reaction	351
<i>Claire Chevalier, Fabrice Debbasch, Yann Ollivier</i>	
012055: Dynamical Spacetimes and Gravitational Radiation in a Fully Constrained Formulation	357
<i>Isabel Cordero-Carrión, Pablo Cerdá-Durán, José María Ibáñez</i>	
012056: Numerical Studies of the Efficiency of Resonant Relaxation Around a Massive Black Hole	363
<i>Gábor Kuri, Ehud Eilon, Tal Alexander</i>	
Author Index	