Quantum Field Theory Under the Influence of External Conditions
$\mathcal{QFEXT}09$
University of Oklahoma, Norman
September 21–25, 2009
Schedule of Talks

updated 9/18/09

Cyberlounge, featuring 4 laptops with printer, will be open throughout QFEXT09, in Room A1.

Note: All Plenary sessions will talk place in Conference Room A. Coffee Breaks will take place in Conference Room B, where Posters will be displayed throughout the conference. Parallel Sessions A will take place in Room A 3/5, while Parallel Sessions B will take place in Room A 4/6. Lunches will be provided each day in Corridor A.

Sunday, September 20

5:00–8:00pm Registration at Sooner Legends and Suites

Monday, September 21

7:30–8:45 Registration at Forum/Coffee in Conference Room B

8:45–9:00 Welcome: Bell, Parker, Williams, Milton

- Session I. Chair: *Steve Fulling*

9:00–10:00 Michael Bordag, "Casimir Force at Small Separation"

10:00–10:15 *Coffee Break, in Conference Room B*

- Session II. Chair: *Diego Dalvit*

10:15–11:15 Ricardo Decca, "Details on the Experimental Setup for Precision Measurements of the Casimir Force"

11:15–12:15 Umar Mohideen, "Demonstration of the Geometry Dependence through the Lateral Casimir Effect"

12:15–1:30 *Lunch in Corridor A*

- Session III. Chair: *Kim Milton*

1:30–2:30 Jeremy Munday, "Repulsive Casimir-Lifshitz Forces and Torques—A Route Toward Quantum Levitation and Ultra-low Friction Devices"

2:30–3:30 Maarten DeKieviert, "Precision Experiments on Casimir-Polder Forces"

3:30–3:45 *Coffee Break in Conference Room B.*

- Session IV. Chair: *Umar Mohideen*

3:45–4:45 Joel Chevrier, "Measures of Casimir Force and of Near-Field Radiative Heat Transfer"

Parallel Session VA Room A3/5, Chair: *Ricardo Decca*

4:45–5:15 Giuseppe Ruoso, "The PVLAS Experiment and its Results: Probing the Quantum Vacuum with Polarized Light and Magnetic Fields"

5:15–5:45 Caterina Braggio, "Parametric amplification of thermal photons to test the MIR apparatus"

5:45–6:15 Jamir Marino, "Casimir-Polder Force Between Two Uniformly Accelerating Atoms and the Unruh Effect"

6:15–6:45 C. Farina, "Dynamical Casimir Effect with Robin Boundary Condition in a Three Dimensional Open Cavity"

Parallel Session VB Room A4/6, Chair: *Israel Klich*

4:45–5:15 Francesco Intravaia, "Dissecting the Casimir Effect: Getting a Clear Understanding of the Undergoing Physical Mechanisms"

5:15–5:45 Felipe DaRosa, "Electromagnetic Energy, Zero-Point Energy, and Casimir Energy"

5:45–6:15 Paulo Maia Neto, "Non-trivial Geometry Effects in the Atom-Surface Dispersive Interaction"

6:15–6:45 Shang-Yung Wang, "Chiral Symmetry Breaking and Stability of the Magnetized Vacuum"

7:00–9:00 *Reception at Sam Noble Oklahoma Museum of Natural History*

Tuesday, September 22

8:00–9:00 Morning coffee in Conference Room B

- Session VI. Chair: *Gerald Dunne*

9:00–10:00 Iver Brevik, "Wedge Casimir Theory: Notes on Thermal Casimir Corrections"

10:00–11:00 Diego Dalvit, "Electrostatic Calibrations and Casimir Force Measurements: The Case of Ge Samples in a Torsion Balance Set-Up"

11:00-11:15 *Coffee Break, in Conference Room B*

- Session VII. Chair: *Michael Bordag*

11:15–12:15 Emil Mottola, "The Trace Anomaly and Dynamical Vacuum Energy in Cosmology"

12:15-1:30 *Lunch in Corridor A*

- Session VIII. Chair: *Bo Sernelius*

1:30–2:30 Lev Pitaevskii, "Casimir-Lifshitz Forces and Entropy"

2:30–3:30 Serge Reynaud, "The Scattering Approach to the Casimir Force"

3:30–3:45 *Coffee Break, in Conference Room B*

Parallel Session IXA Room A3/5, Chair: *Holger Gies*

3:45–4:15 Klaus Kirsten, "Cosmological Pistons"

4:15–4:45 Hongbo Cheng, "The Casimir Effect for Parallel Plates in the Braneworld"

4:45–5:15 Lee-Peng Teo, "Finite Temperature Casimir Effect in the Presence of Extra Dimensions"

5:15–5:45 Francisco Diego Mazzitelli, "Computing the Casimir Force Between Pistons of Arbitrary Shape"

5:45–6:15 Fernando Lombardo, "Computing the Casimir Energy Using the Point-Matching Method"

6:15–6:45 Alexej Weber, "Interplay Between Geometry and Temperature for Inclined Casimir Plates and a Sphere"

Parallel Session IXB Room A4/6, Chair: *Galina Klimchitskaya*

3:45–4:15 Andrea Gambassi, "Controlling and Harnessing Critical Casimir Forces"

4:15–4:45 Francesco Parisen Toldin, "Critical Casimir Forces in the Presence of a Chemically Structured Substrate"

4:45–5:15 Gustavo Moreno, "Bragg Spectroscopy for Measuring Casimir-Polder Interactions with Bose-Einstein Condensates Above Corrugated Surfaces"

5:15–5:45 Luis Reyes Galindo, "Classical Acoustic Casimir Effect"

5:45–6:15 Alexander Studenikin, "Electromagnetic Properties of Neutrinos in Standard Model and Beyond"

6:15–6:45 Yury Sherkunov, "Dispersion Interaction Between Two Atoms in Electromagnetic Fields"

7:00–8:30 *Poster Session in Conference Room B*

Wednesday, September 23

8:00–9:00 Morning coffee in Conference Room B

- Session X. Chair: *Serge Reynaud*

9:00–10:00 Gerald Dunne, "The Search for the Schwinger Effect: Non-perturbative Vacuum Pair Production"

10:00–11:00 Thorsten Emig, "Casimir Physics: Geometry, Shape and Material"

11:00–11:15 *Coffee Break, in Conference Room B*

- Session XI. Chair: *Emilio Elizalde*

11:15–12:15 Holger Gies, "Geothermal Casimir Phenomena"

12:15–1:30 *Lunch in Corridor A*

- Session XII. Chair: *Iver Brevik*

1:30–2:30 Israel Klich, "Spatial Dispersion and the Interaction Between Quasi One Dimensional Objects"

2:30–3:30 Bo Sernelius, "Possible Saturation Effects in Experiments on the Thermal Casimir Effect"

3:30–3:45 *Coffee Break, in Conference Room B*

Parallel Session XIIIA Room A3/5, Chair: *Thorsten Emig*

3:45–4:15 Martin Schaden, "A Quasi-Local Algorithm for Generating Triangulated d-Dimensional Convex Surfaces with a Particular Measure"

4:15–4:45 Jef Wagner, "Scalar Casimir Energies for Separable Coordinate Systems"

4:45–5:15 James R. Babington, "Casimir Forces in N-Sphere Configurations"

5:15–5:45 Jon Harrison, "Vacuum Energy on Quantum Graphs"

5:45–6:15 Babette Doebrich, "Scalar Casimir-Polder Forces for Arbitrary Uniaxial Corrugations"

6:15–6:45 Saad Zaheer, "Casimir Interactions of an Object Inside a Spherical Metal Shell"

Parallel Session XIIIB Room A4/6, Chair: *Ilya Shapiro*

3:45–4:15 Florian Hebenstreit, "Schwinger Effect in Short Laser Pulses"

4:15–4:45 David Owen, "Fermion-Scalar Bound State with Finite Size Corrections"

4:45–5:15 Vladimir Skalozub, "The Spectrum and Characteristics of Gluon Plasma in Chromomagnetic Field at High Temperature"

5:15–5:45 Juan Mateos Guilarte, "Quantum Fluctuations of S^N-Kinks"

5:45–6:15 Inés Cavero-Peláez, "Green's Function Approach in the Sine-Gordon Kink Background"

6:15–6:45 Nikola Petrov, "Fields in Pulsating Resonators: A Dynamical Systems Approach"

7:00–10:00 *Banquet in Forum Conference Room A*

Thursday, September 24

8:00–9:00 Morning coffee in Conference Room B

- Session XIV. Chair: *Maarten DeKieviert*

9:00–10:00 Davide Iannuzzi, "Casimir Force Experiments in Air: Two Birds with One Stone"

10:00–11:00 Roberto Onofrio, "Macroscopic Quantum Vacuum and Gravitation"

11:00–11:15 *Coffee Break, in Conference Room B*

- Session XV. Chair: *Lev Pitaevskii*

11:15–12:15 Galina Klimchitskaya, "Thermal Casimir Force Between Magnetic Materials"

12:15–1:15 Vladimir Mostepanenko, "The Casimir Effect and the Foundations of Statistical Physics"

1:15–2:30 *Lunch in Corridor A*

- Session XVI. Chair: *Jeremy Munday*

2:30–3:30 Carsten Henkel, "Nonzero Temperature Dispersion Forces: Modes and Matter"

3:30–4:30 Ho Bun Chan, "Experimental Demonstration of the Geometry Dependence of the Casimir Force on Nanostructured Surfaces"

4:30–4:45 *Coffee Break, in Conference Room B*

Parallel Session XVIIA Room A3/5, Chair: *Joel Chevrier*

4:45–5:15 Mauro Antezza, "Casimir-Lifshitz Force Out of Thermal Equilibrium and Asymptotic Nonadditivity"

5:15–5:45 Giuseppe Bimonte, "The Bohr-van Leeuwen Theorem and the Thermal Casimir Effect for Conductors"

5:45–6:15 Simen Ellingsen, "Molecular Guiding with Thermal Casimir-Polder Forces?"

6:15–6:45 Carlos Villarreal, "Bose-Einstein Condensation in Finite-size Regions: Towards a Theory of High-T_c superconductivity"

6:45–7:15 Ryan Behunin, "Non-Equilibrium CP-Force"

Parallel Session XVIIB Room A4/6, Chair: *Steven Johnson*

4:45–5:15 Valery Marachevsky, "Exact Results for the Casimir Lateral Force"

5:15–5:45 Christian Schubert, "Three-Loop Euler-Heisenberg Lagrangian and Asymptotic Analysis in $1 + 1$ QED"

5:45–6:15 Prachi Parashar, "Non-Contact Gears III. Electromagnetic Case"

6:15–6:45 Hyunsoo Min, "Efficient and Precise Evaluation of Effective Action in Radial Background Fields"

6:45–7:15 Fabrizio Pinto, "Improved Finite-Difference Dispersion Force Computations in Realistic Geometries"

7:30–9:00 *Roundtable on Thermal Casimir Effects, in Conference Room A*

Friday, September 25

8:00–9:00 Morning coffee in Conference Room B

- Session XVIII. Chair: *Davide Iannuzzi*

9:00–10:00 Steven Johnson, "Geometry-independent Methods to Compute Casimir Forces"

10:00–11:00 Steve Fulling, "Vacuum Energy Density and Pressure Near Boundaries"

11:00–11:15 *Coffee Break, in Conference Room B*

- Session XIX. Chair: *Carsten Henkel*

11:15–12:15 Larry Ford, "Negative Energy Densities in Quantum Field Theory"

12:15–1:15 Ilya Shapiro, "Exact Formfactors in the One-loop Curved-space QED and the Nonlocal Multiplicative Anomaly"

1:15–2:30 *Lunch in Corridor A*

- Session XX. Chair: *Vladimir Mostepanenko*

2:30–3:30 Emilio Elizalde, "Repulsive Casimir Forces from Additional Dimensions"

3:30–3:45 *Coffee Break, in Conference Room B*

Parallel Session XXIA Room A3/5, Chair: *Larry Ford*

3:45–4:15 Oleg Zaslavskii, "Quasi-Black Holes and Lorentz-Abraham Electron in General Relativity"

4:15–4:45 Antonino Flachi, "CFT Quantum Back Reaction and Brane World Black Holes"

4:45–5:15 Alexander Burinskii, "Beam-like Black Hole Radiation and Its Back Reaction on Metric as a Prequantum Kerr-Schild Gravity"

5:15–5:45 Aram Mkhitaryan, "Topological Casimir Effect in Power-law FRW Cosmologies"

Parallel Session XXIB Room A4/6, Chair: *Roberto Onofrio*

3:45–4:15 Marin-Slobodan Tomaš, "Casimir Pressure and Force on a Metal Slab in a Planar Cavity"

4:15–4:45 Ignat Fialkovskiy, "The Casimir Effect for Graphene Described by the Dirac Model"

4:45–5:15 Raul Esquivel-Sirvent, "Controlling Casimir Forces and Torques with External Magnetic Fields. The Role of Magneto-Plasmons"

5:15–5:45 Irina Pirozhenko, "Repulsive Casimir Forces and the Role of Surface Modes"

5:45–6:15 Marco Govoni, "First Principle Calculations of the Casimir Force Between Silicon Films"

Posters

Displayed throughout conference in Conference Room B.

- Antoine Canaguier-Durand, "Casimir Interaction between Plane and Spherical Metallic Surfaces"
- Claudio Ccapa, "Non-superposition Effects in the Dirichlet Casimir Effect"
- Olindo Corradini, "Worldline Approach to QFT on Manifolds with Boundary"
- Ignat Fialkovskiy, "Casimir Type Effects for Scalar Fields Interacting with Material Slabs"
- Guglielmo Fucci, "Non-Perturbative Heat Kernel Asymptotics on Homogeneous Abelian Bundles"
- Toshiyuki Fujii, "Theoretical Studies on Dynamical Casimir Effect for a Quantum Flux in Josephson Artificial Atoms"
- Harald Haakh, "Thermal Effects in the Magnetic Casimir-Polder Interaction"
- Norman Horing, "Graphene van der Waals Interactions"
- Riccardo Messina, "Scattering Approach to Dispersive Atom-Surface Interactions"
- Aram Saharian, "Topological Casimir Effect in Nanotubes and Nanoloops"