

### **Banff International Research Station**

for Mathematical Innovation and Discovery

### Black Holes: New Horizons

Arriving Sunday, November 20 and departing Friday November 25, 2011

#### **MEALS**

- \*Breakfast (Buffet): 7:00 9:30 am, Sally Borden Building, Monday Friday
- \*Lunch (Buffet): 11:30 am 1:30 pm, Sally Borden Building, Monday Friday
- \*Dinner (Buffet): 5:30 7:30 pm, Sally Borden Building, Sunday Thursday
- Coffee Breaks: As per daily schedule, in the foyer of the TransCanada Pipeline Pavilion (TCPL)
- \*Please remember to scan your meal card at the host/hostess station in the dining room for each meal.

### **MEETING ROOMS**

All lectures will be held in the new lecture theater in the TransCanada Pipelines Pavilion (TCPL). LCD projector, overhead projectors and blackboards are available for presentations.

#### **SCHEDULE**

### Sunday, November 20

16:00	Check-in begins (Front Desk - Professional Development Centre - open 24 hours)
17:30 – 19:30	Buffet Dinner, Sally Borden Building
20:00	Informal gathering in 2nd floor lounge, Corbett Hall
	Beverages and a small assortment of snacks are available on a cash honor system.

## Monday, November 21

7:00 - 8:45	Breakfast
8:45 - 9:00	Introduction and Welcome by BIRS Station Manager, TCPL
9:00 - 9:30	Robert Mann, Multi-dimensional black holes with reduced symmetry
9:30 – 10:00	Eric Poisson, Electromagnetic self-force as a cosmic censor
10:00 – 10:30	Luis Lehner, Finally the final state of the GL instability
10:30 – 11:00	Coffee Break, TCPL
11:00 – 11:30	Hirotaka Yoshino, Bosenova collapse of axion cloud around a rotating black hole
11:30 – 12:00	Hyun Kyu Lee, Effect of stangeness in compact stars
12:00 – 13:30	Lunch
13:30 – 14:30	Guided Tour of the Banff Centre; meet in the 2nd floor lounge, Corbett Hall
14:30 – 15:00	Group Photo; meet on the front steps of Corbett Hall
15:00 – 15:30	Coffee Break, TCPL
15:30 – 16:00	Pavel Krtous, Integrability and separability in Kerr-NUT-AdS spacetimes-new connections
16:00 – 16:30	Claude Warnick, Hidden symmetries of the Kerr-Sen black hole: generalizing the Yano tensor
16:30 – 16:50	Break
16:50 – 17:10	Masashi Kimura, Analyticity of event horizons of extremal Kaluza-Klein black holes
17:10 – 17:30	Chulmoon Yoo, Construction and structure of "the black hole universe
17:30 – 18:00	Akihiro Ishibashi, Black holes in de Sitter space
18:00	Dinner

## Tuesday, November 22

9:00 - 9:30 9:30 - 10:00	Roberto Emparan, <i>Critical geometries at horizon intersections and mergers</i> Sergey Solodukhin, <i>Entropy of classicalon</i>
10:00 – 10:30	Kayll Lake, Gradient flows and the visualization of curvature
10:30 – 11:00	Coffee Break, TCPL
11:00 – 11:30	Bill Unruh, Black hole thermal radiation
11:30 – 12:00	Takahiro Tanaka, <i>Hawking radiation of interacting fields</i>
12:00 - 15:30	Lunch and informal discussions
15:00 – 15:30	Coffee Break, TCPL
15:30 – 16:00	Hanno Sahlmann, Black hole horizons from within loop quantum gravity
16:00 – 16:30	Valeri Frolov, <i>Spinoptics in a stationary spacetime</i>
16:30 – 16:50	Break
16:50 – 17:10	Andrey Shoom, Scattering of polarized light by rotating black hole
17:10 – 17:30	Masato Nozawa, <i>Black holes in (fake)supergravity</i>
17:30 – 17:50	Abdallah Al Zahrani, Particle Dynamics in Weakly Charged Extreme Kerr Throat
18:00	Dinner
10.00	Dimei

Wednes	day, N	lovem	ber 23
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9:00 - 9:30 9:30 - 10:00 10:00 - 10:30	Ruth Gregory, <i>Lifshitz black holes in string theory</i> Shinji Mukohyama, <i>Cosmology and GR limit of Horava-Lifshitz gravity</i> Kei-Ichi Maeda, <i>Black holes in an expanding universe</i>
10:30 - 11:00	Coffee Break, TCPL
11:00 – 11:30 11:30 – 12:00	Jutta Kunz-Drolshagen, Black holes in Einstein-Gauss-Bonnet theory Mu-In Park, Observational Constraints on Horava Gravity Cosmology
12:00 - 15:30	Lunch and informal discussions
15:00 – 15:30	Coffee Break, TCPL
15:30 - 16:00	Michael Volkov, Black holes in massive gravity theories
16:00 – 16:30	Don Page, Large Black Holes in Randall-Sundrum II: Introduction
16:30 – 16:50	Break
16:50 – 17:10 17:10 – 17:30	Shima Tari, Large Black Holes in Randall-Sundrum II: Numerical Results Yongjoon Kwon, The entropy spectra of black holes from their characteristic modes
17:30 – 17:50	Yuichiro Sekiguchi, Black Hole formation in stellar core collapse
18:00	Dinner

# Thursday, November 24

9:00 - 9:30	Matt Choptuik, Critical collapse of collisionless matter
9:30 - 10:00	Andrey Zelnikov, Self-force of charged particles near higher dimensional black
	holes
10:00 – 10:30	Gabor Kunstatter, Singularity resolution inside radiating 2-D Black Holes
10:30 – 11:00	Coffee Break, TCPL
11:00 - 11:30	Masaru Shibata, Gravitational waves from NS-NS/BH-NS binaries
11:30 – 12:00	Barak Kol, <i>New physics with old black holes</i>
12:00 – 15:30	Lunch and informal discussions
15:00 – 15:30	Coffee Break, TCPL
15:30 – 16:00	Steve Carlip, Effective Conformal Descriptions of Black Hole Entropy
16:00 – 16:30	David Kubiznak, Thermodynamic volume of black holes and reverse
	isoperometric inequality
16:30 – 16:50	Break
16:50 – 17:20	Sung-Won Kim, Gravitational wave generation due to a wormhole accretion onto
	a black hole
18:00	Dinner

## Friday, November 25

9:00 - 9:30	Gungwon Kang, Black hole scattering cross section in parabolic orbits
9:30 - 10:00	Rong-Gen Cai, Holographic Superconductors from Gauss-Bonnet Gravity
10:00 - 10:30	Sang Pyo Kim, Vacuum polarization and Hawking radiation
11:30 – 13:30	Lunch and informal discussions

Checkout by 12 noon.

\*\* 5-day workshop participants are welcome to use BIRS facilities (BIRS Coffee Lounge, TCPL and Reading Room) until 3 pm on Friday, although participants are still required to checkout of the guest rooms by 12 noon. \*\*