



Updated on October 22, 2015

**UA International Research Workshop & School:
Holography near and far-from equilibrium
October 24-30, 2015**

This international **Research Workshop** and “**Summer School**” will take place at the University of Alabama, Tuscaloosa, in conjunction with the two-day **General Relativity Centennial Ceremony** planned by the Department of Physics. The full event lasts 7 days (from Saturday to the following Friday) and is tailored towards about 15 local graduate students, postdocs, and faculty from UA, plus about 10 invited international experts. Outside participants will be welcome depending on capacity.

Summer School: During the first 2 days of this event, lectures and exercises on “Holography” and related topics will be provided by international experts. These activities will be targeted towards graduate students with limited prior knowledge of quantum field theory and general relativity.

Workshop: The following 5 days will be tailored more towards the international experts. But students and interested faculty are encouraged to participate. The format of scientific talks and associated problem solving sessions will be continued also during this part of the event. The “Problem Sessions” can be used for working in groups on problems suggested by the speakers, for individual work, or for discussion. The main idea is to have everybody in one room and to provide an environment for interaction.

Goals: transfer knowledge; share latest methods; work out a list of viable future projects; develop or strengthen research collaborations.

The event is open and free of charge for all UA students, postdocs, and faculty.

General Relativity Centennial Ceremony: There are going to be two public lectures on General Relativity, one of which is given by Prof. Dr. Robert Wald during the workshop week. The other public lecture by Prof. Dr. Heino Falcke takes place the week after the workshop, on Thursday, Nov 5. Prof. Wald will also give a colloquium talk during the workshop week.

Preliminary program* (updated: October 22, 2015)

– events are located in 1012 NERC unless noted otherwise

*subject to change, so check for most recent version

| Day | Time | Topic | Speaker / remarks |
|-------------|------------------------|--|--|
| Sat, Oct 24 | Day 1 | Summer School | |
| | 9.00-10.00 | Lecture I: Holography as a research area | Kaminski (UA Tuscaloosa) |
| | 10.00-10.15 | Break | |
| | 10.15-11.15 | Lecture II: AdS/CFT in a nutshell 1 | Uhlemann (UW Seattle) |
| | 11.15-11.30 | Break | |
| | 11.30-12.30 | Lecture III: AdS/CFT in a nutshell 2 | Uhlemann (UW Seattle) |
| | 12.30-14.00 | Lunch | |
| | 14.00-17.30 | Exercise Session I | |
| Sun, Oct 25 | Day 2 | Summer School | |
| | 9.00-10.00 | Lecture IV: AdS/CFT in a nutshell 3 | Uhlemann (UW Seattle) |
| | 10.00-10.15 | Break | |
| | 10.15-11.15 | Lecture V: Fluids and black holes 1 | Jensen (U Stony Brook) |
| | 11.15-11.30 | Break | |
| | 11.30-12.30 | Lecture VI: Fluids and black holes 2 | Jensen (U Stony Brook) |
| | 12.30-14.00 | Lunch | |
| | 14.00-17.30 | Exercise Session II | |
| Mon, Oct 26 | Day 3 | Workshop | |
| | 9.00-9.15 | Welcome | |
| | 9.15-10.45 | Lecture VII: Dynamical AdS spacetimes and holographic thermalization | v.d. Schee (MIT) |
| | 10.45-11.00 | Coffee Break | |
| | 11.00-12.30 | Lecture VIII: Thermalization in a Holographic Confining Gauge Theory - numerical code for generic problems | Rosen (IC London) |
| | 12.30-14.00 | Lunch: Surin of Thailand | |
| | 14.00-15.30 | Problem Session | |
| | 15.30-16.00 | Coffee Break | |
| 16.00-17.30 | Problem Session | | |
| 17.30-18.30 | Solutions / Discussion | | |
| | 19.00 | Dinner: Epiphany | |
| | | Informal dinner at Mellow Mushroom | All speakers & participants |

| Day | Time | Topic | Speaker / remarks |
|-------------|---------------|--|-------------------------------|
| Tue, Oct 27 | Day 4 | Workshop/Centennial Celebration | |
| | 9.00-10.30 | Lecture IX: Numerical Relativity in AdS Spacetimes: Black Hole Collisions | Bantilan (U Boulder) |
| | 10.30-11.00 | Coffee Break | |
| | 11.00-12.30 | Lecture X: Time-dependent brane systems: dynamical meson melting | Ishii (U Boulder) |
| | 12.30-14.00 | Lunch: The Fresh Food Company | |
| | 14.00-15.30 | Problem Session | |
| | 15.30-16.00 | Coffee Break | |
| | 16.00-17.30 | Problem Session | |
| | 17.30-18.30 | Solutions / Discussion | |
| | | | Centennial Celebration |
| | 19.00 | Public Lecture (45' plus questions) | Wald at Lloyd 38 |
| | 20.00 | Reception | |
| Wed, Oct 28 | Day 5 | Workshop/Centennial Celebration | |
| | 9.00-9.45 | Lecture XI: Quasinormal modes of magnetic & electric black branes versus far-from equilibrium anisotropic fluids | Janiszewski (Victoria) |
| | 9.45-10.30 | Discussion: n-point functions far-from equilibrium | Wu (UA Tuscaloosa) |
| | 10.30-11.00 | Coffee Break | |
| | 11.00-12.30 | Problem Session | |
| | 12.30-14.00 | Lunch: Sitar Indian Restaurant | |
| | 14.00-15.15 | Solutions/Discussion | |
| | 15.30-15.45 | Coffee & Cookies | <i>at Gallalee 227</i> |
| | 15.45-17.00 | GR Centennial Colloquium | Wald at Gallalee 227 |
| | | 19.00 | Dinner: Glory Bound Gyro Co |
| Thu, Oct 29 | Day 6 | Workshop | |
| | 9.00-10.30 | Discussion: future of (numerical) holography | Karch (UW Seattle) |
| | 10.30-11.30 | Campus Tour | |
| | 11.30-12.00 | Light Lunch | <i>lunchboxes</i> |
| | 12.00-16.00 | Excursion | |
| | 16.00 - 19.00 | Conference BBQ | |
| | 19.00 - | Refreshments | |
| Fri, Oct 30 | Day 7 | Workshop | |
| | 9.00-10.30 | Lecture XII: MERA | Oberreuter (TU München) |
| | 10.30-11.00 | Coffee Break | |
| | 11.00-12.30 | Problem Session | |
| | 12.30-14.00 | Lunch: Sweet Home Food Bar | |
| | 14.00-16.00 | Solutions / Discussion | |
| | 19.00 | Dinner: Chuck's Fish | |