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22/5 2019

Masterclasses in Relativistic Fluid Dynamics: From formulation to simulation
Southampton 16-19 July 2019

Tuesday 16/7

9:00-9:30	Arrival and welcome
9:30-10:30	An introduction to relativistic fluid dynamics Nils Andersson, Southampton
11:00-12:30	A variational approach to multifluid systems Gregory Comer, St Louis
14:00-15:00	Non-Hamiltonian actions David Tsang, Bath
15:00-15:30	Introductions+background/projects/interests
16:00-17:00	Contributed student talks (20+10min) Ronaldas Macas: Unmodeled source reconstruction with gravitational waves Maitraya Bhattacharyya: Analytical and numerical treatment of perturbed black holes in horizon-penetrating coordinates

Wednesday 17/7

9:00-10:30	Formulations of the Einstein equations for spacetime evolutions Carsten Gundlach, Southampton
11:00-12:30	Simulating relativistic fluids Ian Hawke, Southampton
13:30-15:00	Workshop: Selected problems from Open Astrophysics Bookshelf
15:30-17:00	Contributed student talks (20+10min) Peter Hammond: Conservative to primitive Lorenzo Gavassino: Thermodynamics of multifluids Abhishek Das: The p-g instability

Thursday 18/7

9:00-10:30	Neutron star dynamics & universal relations Lap Ming Lin, Hong Kong
11:00-12:30	The role of transport and viscosity in neutron star mergers Mark Alford, St Louis
14:00-15:30	Workshop: The Einstein toolkit
16:00-17:00	Bayesian data analysis: application to the rotational evolution of the Vela pulsar during the 2016 glitch

Greg Ashton, Monash

Friday 19/7

9:00-10:30	From electromagnetism to resistive MHD Nils Andersson, Southampton
11:00-12:30	Relativistic superfluids Andreas Schmitt, Southampton
14:00-16:00	Discussion – State of the art and open issues