



# Frontiers in Numerical Relativity 2022 (FNR2022)

## Monday 25 July 2022

**Short talks: Chair Prof. Bernd Bruegmann - Abbeinum/Ground floor-HS1 - Hörsaal 1 (17:00-18:15)**

time	[id] title	presenter
17:00	[59] Free hyperboloidal evolution using conformal compactification	Dr VANO-VINUALES, Alex
17:15	[34] Some ongoing Efforts for Evolving Einstein Field Equations on Hyperboloidal Slices	Dr GAUTAM, Shalabh
17:30	[48] A new first-order formulation of the Einstein equations exploiting analogies with electrodynamics	Dr OLIVARES, Hector
17:45	[17] Modified CCZ4 formulation of Einstein-scalar-Gauss-Bonnet theory	ARESTÉ SALÓ, Llibert

# Tuesday 26 July 2022

## **Short talks: Chair Prof. Sebastiano Bernuzzi - Abbeinum/Ground floor-HS1 - Hörsaal 1 (09:00-10:00)**

time	[id] title	presenter
09:15	[40] Axisymmetric critical collapse on a shoestring	KHIRNOV, Anton
09:30	[27] Critical phenomena in gravitational collapse with bumps	CORS AGULLÓ, Daniela
09:45	[28] Notes on the Asymptotics of near Kerr Initial Data by Evolutionary Solvers	CSUKÁS, Károly

## **Short talks: Chair Dr. Nils Deppe - Abbeinum/Ground floor-HS1 - Hörsaal 1 (12:00-12:45)**

time	[id] title	presenter
12:00	[21] Gravitational-wave data analysis with the Newman-Penrose scalar	Dr CALDERON BUSTILLO, Juan
12:15	[62] Machine-Learning Gravitational-Wave Search Challenge 1: A summary of results	ZELENKA, Ondřej
12:30	[45] Primordial black hole formation during the QCD phase-transition	Dr MUSCO, Ilia

## **Short talks: Chair Dr. Nils Deppe - Abbeinum/Ground floor-HS1 - Hörsaal 1 (17:45-18:30)**

time	[id] title	presenter
17:45	[22] Numerical relativity simulations of the neutron star merger GW190425: microphysics and mass ratio effects	CAMILLETTI, Alessandro
18:00	[36] Detectability of nuclear reactions in neutron star mergers through gravitational waves	HAMMOND, Peter
18:15	[39] High-order numerical methods for solving the M1 neutrino formalism	IZQUIERDO, Manuel R.

# Wednesday 27 July 2022

## **Short talks: Chair Dr. Kenta Kiuchi - Abbeanum/Ground floor-HS1 - Hörsaal 1 (09:00-10:00)**

time	[id] title	presenter
09:00	[20] Numerical relativity and the propagation of gravitational waves through matter	Prof. BISHOP, Nigel
09:15	[57] Merger simulations of GW170817 with V-QCD EOS	TOPOLSKI, Konrad
09:30	[15] Universality of the turbulent magnetic field amplification in binary neutron star mergers	AGUILERA-MIRET, Ricard
09:45	[23] Towards the inclusion of bulk viscosity in numerical relativity simulations	CHABANOV, Michail

## **Short talks: Chair Prof. David Hilditch - Abbeanum/Ground floor-HS1 - Hörsaal 1 (12:00-13:00)**

time	[id] title	presenter
12:00	[65] Progress toward simulating binary black holes with SpECTRE	Prof. LOVELACE, Geoffrey
12:15	[56] FUKA: A public code for initial data of unequal-mass, spinning compact-object binaries	TOOTLE, Samuel
12:30	[51] A task-based parallel elliptic solver based on discontinuous-Galerkin methods	Prof. PFEIFFER, Harald
12:45	[60] Worldtube excision method for intermediate-mass-ratio inspirals: scalar-field toy model in 3+1D	WITTEK, Nikolas

## **Short talks: Chair Dr. Carlos Palenzuela - Abbeanum/Ground floor-HS1 - Hörsaal 1 (17:00-18:00)**

time	[id] title	presenter
17:00	[31] Entropy as shock indicator in neutron star merger simulations	Dr DOULIS, Georgios
17:15	[29] `GR-Athena++`: puncture evolutions on vertex-centered oct-tree AMR	Dr DASZUTA, Boris
17:30	[24] GRHD simulations with GR-Athena++	Dr COOK, William
17:45	[61] Towards Kokkos GR-Athena++: puncture evolutions on GPUs	ZAPPA, Francesco

# Thursday 28 July 2022

## Short talks: Chair Dr. Katy Clough - Abbeanum/Ground floor-HS1 - Hörsaal 1 (09:00-10:00)

time	[id] title	presenter
09:00	[44] Computational Quests: from Cactus to Simflowny and beyond	Prof. MASSO, Joan
09:15	[50] Numerical evolution of Good-Bad-Ugly-F system as a toy model for hyperboloidal numerical relativity	PETERSON BORQUEZ, Christian
09:30	[46] Challenges and pitfalls in the development of a two moment GRRHD code	MUSOLINO, Carlo
09:45	[52] hp-Adaptive Mesh Refinement in bumps	RENKHOFF, Sarah

## Short talks: Chair Dr. Andreas Bauswein - Abbeanum/Ground floor-HS1 - Hörsaal 1 (12:00-13:15)

time	[id] title	presenter
12:00	[54] Mergers of Dark-Matter admixed Neutron Stars	Dr RÜTER, Hannes
12:15	[38] Parasite black holes: the swallowing of a fuzzy dark matter soliton	Dr IKEDA, Taishi
12:30	[58] Dynamical friction from ultralight dark matter	Dr TRAYKOVA, Dina
12:45	[32] Numerical Simulations of Dark Matter Admixed Neutron Star Binaries	EMMA, Mattia
13:00	[18] Black hole binary mergers with light scalar fields: the impact of initial data.	BAMBER, Jamie

## Short talks: Chair Dr. Daniela Doneva - Abbeanum/Ground floor-HS1 - Hörsaal 1 (17:45-19:00)

time	[id] title	presenter
17:45	[64] I-boson stars	Prof. SARBACH, Olivier
18:00	[33] Initial data for unequal-mass boson star collisions	EVSTAFYEVA, Tamara
18:15	[19] Mergers of Exotic Compact Objects	Dr BEZARES, Miguel
18:30	[63] The piercing of a boson star by a black hole	Dr ZILHAO, Miguel
18:45	[55] Merger dynamics of binary Boson stars	SIEMONSEN, Nils

# Friday 29 July 2022

## **Short talks: Chair Prof. Pau Figueras - Abbeanum/Ground floor-HS1 - Hörsaal 1 (09:00-10:00)**

time	[id] title	presenter
09:00	[25] Fate of radiating black holes with minimum mass in Einstein-dilaton-Gauss-Bonnet theory of gravity	CORELLI, Fabrizio
09:15	[47] Binary black hole coalescence in scalar-Gauss-Bonnet gravity	Dr OKADA DA SILVA, Hector
09:30	[26] Evolution of binary black holes in Einstein scalar Gauss Bonnet	CORMAN, Maxence
09:45	[30] Dynamical descalarization with a jump during black hole merger	Dr DONEVA, Daniela

## **Short talks: Chair Prof. Pau Figueras - Abbeanum/Ground floor-HS1 - Hörsaal 1 (10:30-11:15)**

time	[id] title	presenter
10:30	[53] Core collapse in scalar-tensor theory with massive fields	ROSCA-MEAD, Roxana
10:45	[37] Nonlinear evolution of black holes in Quadratic Gravity	Dr HELD, Aaron
11:00	[41] UV completions, fixing the equations, and nonlinearities in k-essence	LARA, Guillermo