

General Relativity Minicourse

March 1–3, 2022 | 10am – 12:00pm

Harvard University Center of Mathematical Sciences and Applications (CMSA)
20 Garden Street, Cambridge MA, Room G10

Dr. Stefan Czimek

Characteristic Gluing for the Einstein Equations

This course serves as an introduction to characteristic gluing for the Einstein equations (developed by the lecturer in collaboration with S. Aretakis and I. Rodnianski). First we set up and analyze the characteristic gluing problem along one outgoing null hypersurface. Then we turn to bifurcate characteristic gluing (i.e. gluing along two null hypersurfaces bifurcating from a spacelike 2-sphere) and show how to localize characteristic initial data. Subsequently we turn to applications for spacelike initial data. Specifically, we discuss in detail our alternative proofs of the celebrated Corvino-Schoen gluing to Kerr and the Carlotto-Schoen localization of spacelike initial data (with improved decay).

cmsa.fas.harvard.edu/gr-program/

