

LAN-HSUAN HUANG  
(UNIVERSITY OF CONNECTICUT)

## **Localized Deformation for the Einstein Constraint Map**

The localized deformation techniques of Corvino–Schoen and Chruściel–Delay for the vacuum constraint map have been shown useful in various applications. For example, the resulting gluing technique produces interesting asymptotically flat vacuum initial data sets with Kerr asymptotics. We obtain a generalization for the dominant energy condition (DEC). Comparing to the vacuum case, the subtlety is to control the deformed length of the current density in the DEC. Our proof uses a new modified constraint map that is designed specifically to decrease the length. As an application, we produce many initial data sets with DEC with Kerr–Newman asymptotics. This is a joint work with Justin Corvino.