

**BLACK HOLES IN DENSE STAR CLUSTERS**  
**Aspen Center for Physics**  
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TITLE: Relativistic Effects on Stellar Tidal Disruptions

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Most of the close encounters between main sequence stars and supermassive black holes (SMBHs) with  $M_{bh} > 10^6 M_{sun}$  take place well within the regime where general relativistic effects are important. These effects correspond to both the strong gravitational field that prevails in the vicinity of these objects and to the frame dragging generated by a rotating SMBH. In this talk, I will present recent developments for modelling these effects within a Newtonian smoothed particle hydrodynamics code. I will then discuss recent numerical simulations performed with this code for studying the role of general relativity on stellar tidal disruptions by SMBH.