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## Critical phenomena in gravitational collapse with bamps

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We use our adapted pseudo-spectral code bamps, with its new hp adaptive mesh refinement, to tune close to the barrier between gravitational collapse and dispersed fields, in order to study the critical phenomena that emerges near that threshold. In spherical symmetry, we observe critical phenomena by evolving massless scalar fields. This has allowed us to assess the adequate choice of gauge source functions and damping parameters for collapse evolutions performed with generalised harmonic gauge. On the other hand in axisymmetry, we evolve six one-parameter families of Brill wave initial data in vacuum: three prolate and three oblate, including two centred and four off-centred. In agreement with previous work we find two disjoint centres of collapse close to the threshold. We also found no evidence for strict DSS nor universal power-law scaling of curvature quantities. Nevertheless, approximately universal strong curvature features and echoes were found within all six families close to the threshold.

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