

On collapse dynamics in Yang–Mills and wave map equations

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Abstract: In this talk I discuss Yang–Mills and wave map equations coming from elementary particle physics (related to the gauge fields and sigma-model, respectively) and which are interesting from the geometric viewpoint. Solutions of these equations in $4 + 1$ and $2 + 1$ dimensions are expected to exhibit a ‘critical’ collapse for certain open sets of initial conditions. This is supported by a considerable body of numerical simulations produced by the numerical gravity community studying the critical black hole formation. We present some recent analytical and numerical results about the collapse dynamics for these equations.