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Abstract for an Invited Paper
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Towards a general map from Navier-Stokes to Maxwell via Einstein

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After a brief review of the cutoff-surface formulation of fluid-gravity duality, we explore the “square root” of the fluid-dual metrics via the classical-double copy, highlighting the constant vorticity flows and potential flows which have algebraically special Weyl double copy fields. We then present progress towards building the same map, from fluid solutions to gravitational solutions to Maxwell solutions, for generic fluids in 2+1 dimensions. This talk is based on JHEP 08 (2020) 147 published with ASU students Nikhil Monga and Tucker Manton, and forthcoming work.