

Talk at Splinter Meeting

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THE NATURE AND FATE OF G2: 3D HYDRODYNAMICAL SIMULATIONS
OF THE COMPACT SOURCE SCENARIO

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Recent observations of the gas and dust cloud G2, discovered by Gillessen et al. (2012), have revealed that G2 has been experiencing its pericenter passage in the last months. Though no major interaction with SgrA* has been detected so far (Haggard et al., 2014; Chandler & Sjouwerman, 2014; Bower et al., 2015; Tsuboi et al., 2015; but see also Ponti et al., 2015), G2 is expected to enter now a new evolutionary phase, in which the hydrodynamic interaction with the hot environment should play a dominant role. The present contribution focuses on the investigation of the compact source scenario, where G2 is produced by the outflow from a mass-losing star. Previous 2D simulations (Ballone et al., 2013) allowed us to get some constraints on the nature of the source. In addition to this, 3D AMR simulations now allow us to perform a more detailed and realistic comparison to observations and to study the full evolution of G2 in such a picture. Such a setup allows to derive more reasonable estimates of the mass inflow towards SgrA*, produced by G2s disruption in the next years, and to hopefully shed some light on the structure of the hot environment G2 is interacting with.