

BLACK HOLES IN DENSE STAR CLUSTERS
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TITLE: The former lives of stellar mass black holes: not alone

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Young massive stars, the progenitors of stellar mass black holes, are nearly exclusively found in multiple systems. Recent observations imply that the large majority of the population of stellar mass black holes, experienced interaction with a binary companion during its former live. It may have been stripped from its envelope, accreted mass and angular momentum or it may even have merged with its companion. In all cases this means that there is no one-to-on relation between the mass of the black hole and the birth mass of its progenitor.

I will discuss the latest constraints on the binary properties of young massive stars, which can be used as input for simulations. I will discuss their impact on the predicted rate of double compact object mergers as well as their effect on the present day mass function in Arches and Quintuplet. I will highlight ongoing surveys to probe runaways and young massive (binary) stars R136, the central star cluster of the Tarantula nebula.