

Contributed Talk

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## MASS TRANSFER EVOLUTION IN HIGH MASS X-RAY BINARIES

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High mass X-ray binaries (HMXB) consist of a massive star surrounded by a compact object. Mass accretion via Roche-lobe overflow (RLOF) or wind capture makes these systems the brightest X-ray sources in the sky. Furthermore HMXB are progenitors of gravitational wave signals by merging stellar black holes. Unfortunately formation, evolution and fate of these systems is only partly understood, due to uncertainties in evolution of massive stars, mass transfer, common envelope description and so on. We investigate the evolution of HMXB using a one-dimensional stellar evolution code and discuss, how the inner structure of the massive component influences the mass transfer rate and subsequently the long term orbital evolution. We find the hydrogen gradient as an important factor determining the behaviour of a RLOF-system and show that systems with large hydrogen gradients can undergo long term stable mass transfer, even in the case of high mass ratios.