Figure 4. A SPH simulation from Becerra et al. (2019) of the exploding CO-star as the SN in the presence of a companion NS: Model "25m1p08E" (see table 2 therein). The CO-star is obtained from the evolution of a 25 $M_\odot$ zero-age main-sequence (ZAMS) progenitor which leads to a pre-SN CO-star mass $M_{CO} = 6.85 M_\odot$. The initial mass of the νNS (formed at the center of the SN) is $1.85 M_\odot$ and the one of the NS companion is $M_{NS} = 2 M_\odot$. The initial orbital period is 4.8 min. The upper panels show the mass density on the binary equatorial plane and the lower ones correspond to the plane orthogonal to it, at two selected times from the SN explosion ($t = 0$ of the simulation), 159 s and 259 s. The reference system is rotated and translated so that the x-axis is along the line that joins the νNS and the NS, and the axis origin $(0, 0)$ is located at the NS position. For this simulation, the NS collapses reaching the secular axisymmetric instability point with a mass $2.26 M_\odot$ and angular momentum $1.24 GM_\odot^2/c$, while the νNS is stable with mass and angular momentum, respectively, $2.04 M_\odot$ and $1.24 GM_\odot^2/c$. Up to the final simulation time, the binary system kept bound although the binary orbit widens, reaching an orbital period of 16.5 min and an eccentricity of $\epsilon = 0.6$. The collapse of the NS to the newly-formed BH, characteristic of a BdHN I, occurs at $t = 21.6$ min.