

Workshop

Stellar End Products: The Low Mass - High Mass Connection

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Title:

Hydrodynamic simulations of common envelope phases

Abstract:

To study the impact of binarity on the mass loss in evolved stars, we performed hydrodynamic simulations of the common envelope phase for a system of a 2 Msol RG and a 1 Msol companion using the AREPO code. Its moving-mesh technique enables us to follow small-scale flow features in unprecedented detail. We are thus able to better resolve the conversion of gravitational energy. Our simulation reveals for the first time that large-scale flow instabilities emerge and are dynamically important for the evolution of the system. This may also mark the onset of turbulent convection in the envelope.