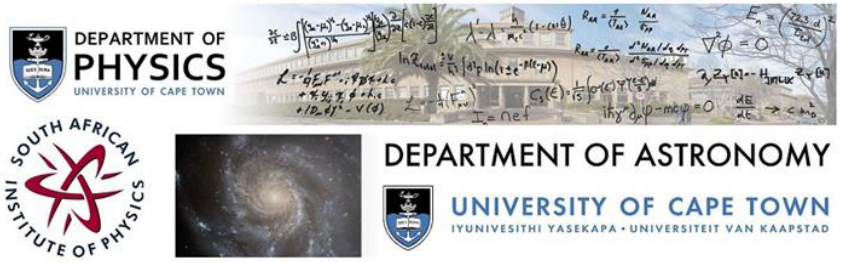

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SILVER MEDALLIST LECTURE: 3D Models of Stellar Wind Interactions

Friday, 8 July 2016 11:10 (40 minutes)

Abstract content
   (Max 300 words)
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Evolved stars, e.g., Wolf-Rayet stars and red (super)giants, lose copious amounts of mass and momentum through powerful, dense stellar winds. The interaction of these outflows with their surroundings results in highly structured and complex circumstellar environments, often featuring knots, arcs, shells and spirals. Recent improvements in computational power and techniques have led to the development of detailed, multi-dimensional simulations that have given new insight into the origin of these structures, and better understanding of the physical mechanisms driving their formation. In this talk, I review one of the main mechanisms that shapes the outflows of evolved stars: interaction with a companion. I will discuss both wind-wind interactions where the companion also ejects a stellar outflow, and mass-transfer interactions where the companion has a weak or insignicant outflow. I will also highlight the broader implications of these stellar wind interactions for other phenomena, e.g, for planetary nebulae, symbiotic and X-ray binaries, novae and supernovae.

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