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**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DES SCIENCES
Département d'astronomie

ASTROPHYSICS SEMINAR



Thursday, 28 June 2007 at 15:00

Magnetic Models of Circumstellar Clouds around Hot, Massive Stars

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Abstract. Recent advances in spectropolarimetric techniques have led to direct detection of moderate to strong (100-10,000 G), tilted dipole magnetic fields in several massive stars. Using a combination of analytic and numerical MHD models, this talk will focus on the role of such magnetic fields in channelling, and sometimes confining, the radiatively driven mass outflows from such stars. In particular, I discuss how the resulting "magnetically confined wind shocks" can explain the moderately hard X-ray emission seen from the O7V star Θ -1 Ori C, and how the trapping of material in a "rigidly rotating magnetosphere" can explain the periodically modulated Balmer line emission seen from the magnetic B2pV star σ Ori E. I also discuss how magnetic reconnection heating from episodic centrifugal breakout events might explain the occasional very hard X-ray flares seen from the latter star. I conclude with a brief discussion on the generation of hot-star fields and the broader relationship to other types of magnetospheres.

Additional Information

The seminars are given in the ISDC "Pavillon" building
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WWW: ISDC Seminars: <http://isdc.unige.ch/?Science+seminars>