

SAIP 2011



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Variability of methanol maser in the massive star formation regions

Thursday 14 Jul 2011 at 17:00 (02h00')

Content :

Star formation constitutes one of the basic problems of astrophysics due to the fact that stars are fundamental objects of astronomy. Shu et al. (1987) reviews the theory of low mass star formation from the molecular cloud via accretion disk-outflow. The formation of high mass stars is still not well understood. They may also be formed through accretion disk plus outflow (Shu et al. 1987) or by collision-coalescence which was proposed by Wolfire & Cassinelli (1987) and Bonnell et al. (1998), but most observations support the accretion disk-outflow model. The brightest methanol masers occur at 6668 MHz and 12178 MHz and are found in the star forming regions containing very young massive protostars even before the formation of an ultracompact HII region (Longmore et al. 2007). These masers serve as useful tools to study these regions. The poster will be on the analysis of the time series of 6668 MHz and 12178 MHz methanol maser emission lines in some of the sources which were showing periodic variations in monitoring before the 26 meter Hartebeesthoek Radio Astronomy Observatory (HartRAO) Telescope bearing failure in 2008. After the telescope was repaired in 2010, the programme to monitor these sources was restarted. These two methanol emission lines are radiatively pumped which implies that their variability could be due to the decrease or increase in the seed photons at the radio frequency, or the infrared radiation field that pumps the masers. Since there has been a two year gap in the monitoring program of these sources, we want to establish whether the periodic variations continue. Such periodic behaviour has not been seen in other maser species in star forming regions, so it can provide new insights into what is happening in these regions.

Level (Hons, MSc, PhD, other)? :

MSc

Consider for a student award (Yes / No)? :

yes

Short Paper :

No

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