



Contribution ID: 89 Contribution code: S4 High Energy and Particle Physics
Presentation

Type: **Oral**

The Origin of Maser Flares

Thursday 23 June 2022 11:00 (15 minutes)

Maser flares are spectacular increases in brightness of astrophysical masers over a typical timescale of weeks to months. I consider a number of plausible mechanisms for generating these flares and determine the most likely mechanisms on the basis of timescale, variability index and ability to support periodic flares. The flare mechanisms considered are overlap of clouds in the line of sight, shock compression, rotation of non-spherical clouds and variations in the flux of pumping and background radiation. I briefly introduce the analysis of the flares observed towards a small number of star-forming regions, and discuss the correlation and anti-correlation of flares in different transitions and molecular species. I set out possible roles for the new 40-m TNRT in detecting and monitoring maser flares.

Authors: Dr RICHARDS, Anita (University of Manchester); GRAY, Malcolm; Mr PIMPANUWAT, Bannawit (University of Manchester); Mr COWIE, Fraser (University of Manchester); Dr ETOKS, Sandra (University of Manchester)

Presenter: GRAY, Malcolm

Session Classification: S4 High Energy and Particle Physics

Track Classification: High Energy and Particle Physics