



# Physical Research Laboratory, Ahmedabad

## Colloquium 20\_10

- Speaker:** Dr. Lokesh Kumar Dewangan  
Assistant Professor, Astronomy & Astrophysics Division, PRL, Ahmedabad
- Title:** "New insights into the formation of massive stars."
- Date and Time:** Wednesday, 18 November 2020, 16:00 - 17:00 hrs
- YouTube Link:** <https://www.youtube.com/watch?v=6IYetdhxgRI>

### Abstract

Massive stars are astronomical objects having masses greater than 8 Msun, which is the threshold necessary for a star to evolve into a supernova. The physical process concerning the birth of massive stars ( $> 8$  Msun) is one of the outstanding problems in astrophysics since they are extremely influential in the evolution of galaxies through their energetics. It is still unclear whether the formation mechanism of a massive star is a scaled-up version that produces low-mass stars like our Sun or if it is a fundamentally different process. In recent years, two large-scale theories are the points of interest because of their growing evidence for the formation of massive stars: (1) collision between molecular clouds, and (2) accretion through parsec-scale filaments. However, investigations of observational signatures of these processes is very challenging. In this colloquium, I will present some important observational findings, which provide new insights into the formation of massive stars.

### The Speaker

Dr. Lokesh Kumar Dewangan is currently working as Assistant Professor in the Astronomy & Astrophysics Division, PRL, Ahmedabad. Dr. Dewangan did his Masters in Physics from Pt. R. S. S. University, Raipur in 2004, and completed his Ph.D. from Physical Research Laboratory (PRL), Ahmedabad, in 2011. He did his post-doctoral studies at the Tata Institute of Fundamental Research (TIFR), Mumbai, India (2011-2012), the Centro de Astrofísica da Universidade do Porto (CAUP), Porto, Portugal (2012-2014), and the Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), Tonantzintla, Mexico (2014-2015). His research work is focused in the field of massive star formation. He has extensively used multi-scale and multi-wavelength observational data covering radio (line and continuum) through near infrared and optical wavelengths (from ground-based and space-based observations) to study the Galactic massive star-forming regions. Dr. Dewangan has many international peer-reviewed journal publications. As the PI for this research on star formation, his proposal has been accepted at Atacama Large Millimeter/submillimeter Array (ALMA), which is the world's largest ground-based millimeter/submillimeter telescope facility.

**ALL ARE WELCOME**

