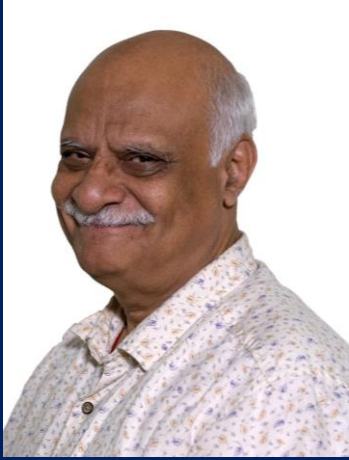


# InRaSS Colloquium Series

3<sup>rd</sup> Talk (1<sup>st</sup> August, 2023 18:00 – 19:00 IST)



**Webinar on:**

## Ultra-low frequency gravitational wave search using radio astronomy

**Bhal Chandra Joshi**

Raja Ramanna Chair (Emeritus Professor)

National Centre for Radio Astrophysics (NCRA), Pune

Gravitational waves (GWs) are an essential outcome of Einstein's General theory of relativity, but eluded detection for about a century. High frequency GWs were announced in 2015, while the low frequency GWs window appears to be opening in a recent announcement last month by experiments world-wide including Indian Pulsar Timing Array experiment (InPTA), which uses a radio astronomy means employing the premier Indian radio astronomy facility, the upgraded Giant Meterwave Radio Telescope (uGMRT).

In this talk, linkage of radio science with a totally different messenger that GWs are will be examined after a brief introduction to GWs and recent announcement. After highlighting the need for precision, the required radio instrumentation in the form of antennas, receivers and clocks will be discussed in the context of the uGMRT. The talk will conclude with a description of the InPTA experiment and its results in the context of three other international experiments, namely the European Pulsar Timing Array (EPTA), the North American Gravitational Wave Observatory (NANOGrav) and the Parkes Pulsar Timing Array (PPTA), outlining the road ahead with the currently in progress data combination of all these experiments under the auspices of the International Pulsar Timing Array (IPTA).

**Organised by:** Indian Radio Science Society  
(InRaSS)



**Webinar Link:** <https://www.youtube.com/watch?v=ea4LF86wJ4Y>