

## **Seminar**

**Towards a controlled MASER by electronic radiation damping control at cryogenic and room temperatures**

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Recently we have shown that hyperpolarized proton nuclear spins coupled to NMR detection resonant circuit when polarized negatively can give rise to very long coherent pulsed radio frequency (M/RASER) signal during dynamic nuclear polarization (DNP) experiments at 1.2 K. This behaviour was ascribed to a complex phenomenon resulting from the combined effect of radiation damping (RD), distant dipolar field and the repolarization of the  $^1\text{H}$  nuclear spins by DNP mechanism. In order to produce a controlled MASER, we have built an electronic feedback radiation damping control unit. Preliminary experimental results of the multi-mode maser in ethanol solution (room temperature) using the feedback device will also be presented.

***Wednesday, Aug 16<sup>th</sup> 2023***

***4:00 PM (Tea / Coffee 03.45 PM)***

***Auditorium, TIFR-H***