

Colloquium

Date/ तारीख : **Thursday, 25th February, 2016**

Time/ समय : 3.00pm to 4.00pm

Venue/ थान : Madhava Hall (HSB 357), 2nd Floor, Department of Mathematics.

Speaker/ व ता : **Prof. M. T. Nair**

Title/ शीषक : **Compact Operators and Hilbert Scale in Ill-Posed Problems**

Abstract/ सार:

A *Hilbert scale* is a family of Hilbert spaces $H_s, s \in \mathbb{R}$ such that for every $s, t \in \mathbb{R}$ with $s < t$, $H_t \subseteq H_s$ and the inclusion operator is continuous. Given a Hilbert space, we show how to construct a Hilbert scale with $H_0 = H$ using the concept of *Gelfand triple* and give examples of Hilbert scales which are generated by compact operators between Hilbert spaces as well as closed densely defined unbounded operators. Citing results from some of the recent work of the author, we discuss the use of Hilbert scales while deriving error estimates for ill-posed operator equations.

“All are welcome”