

DEPARTMENT OF MATHEMATICS, IIT-MADRAS

गणित विभाग, आईआईटी मद्रास

Colloquium

- Date/ तारीख** : Thursday, 3rd March, 2016
- Time/ समय** : 3.00pm to 4.00pm
- Venue/ स्थान** : Madhava Hall (HSB 357), 2nd Floor,
Department of Mathematics.
- Speaker/ वक्ता** : **Dr. Sumesh K.**
Postdoctoral Fellow,
IMSc. Chennai
- Title/शीर्षक** : **GNS-pair: Construction and applications**

Abstract/सार


When one can construct a Hilbert space out of a given set \mathcal{X} ? We prove that given a set \mathcal{X} and a *positive definite kernel* $k : \mathcal{X} \times \mathcal{X} \rightarrow \mathbb{C}$ there exists a Hilbert space \mathcal{H} and a map $\varphi : \mathcal{X} \rightarrow \mathcal{H}$ such that $k(x, y) = \langle \varphi(x), \varphi(y) \rangle$ for all $x, y \in \mathcal{X}$. The pair (\mathcal{H}, φ) is called *GNS-pair* and its construction is known as *GNS-construction*. We define direct sum and tensor product of Hilbert spaces as a special case of GNS-construction. We discuss some applications of GNS-construction. The talk will be accessible to all who know the basic theory of Hilbert spaces.

“All are welcome”

Seminar coordinator

Head, Department of Mathematics


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