CEMS.UL
CENTER FOR MATHEMATICAL STUDIES

SEMINÁRIO

Análise e Equações Diferenciais

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Stable phase retrieval

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ABSTRACT:

A subspace $E\subseteq L_2(\mu)$ is said to do stable phase retrieval (SPR) if there exists a constant $C\geq 1$ such that for any $f,g\in E$ we have

\[\inf_{|\lambda|=1} \|f-\lambda g\|\leq C\||f|-|g|\|. \]

In this case, if $|f|$ is known, then f is uniquely determined up to an unavoidable global phase factor λ; moreover, the phase recovery map is C-Lipschitz. Phase retrieval appears in several applied circumstances, ranging from crystallography to quantum mechanics.

In this talk, I will present some elementary examples of subspaces of $L_2(\mu)$ which do stable phase retrieval and discuss the structure of this class of subspaces.

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