

Perturbed frame sequences: canonical duals and applications.

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We consider perturbation of frames and frame sequences in a Hilbert space \mathcal{H} . It is known that small perturbations of a frame give rise to another frame. We show that the canonical dual of the perturbed sequence is a perturbation of the canonical dual of the original one and estimate the error in the approximation of functions belonging to the perturbed space. We then construct perturbations of irregular translates of a bandlimited function in $L^2(\mathbb{R}^d)$. We give conditions for the perturbed sequence to inherit the property of being Riesz or frame sequence. For this case we again calculate the error in the approximation of functions that belong to the perturbed space and compare it with our previous estimation error for general Hilbert spaces. This talk is based in a joint work with Sigrid Heineken and Ewa Matusiak.