983-46-624   **Karlheinz U. Grochenig*** (`groch@math.uconn.edu`), Department of Mathematics U-3009, University of Connecticut, Storrs, CT 06269-3009. *Localization of Frames.*

We introduce a new concept to describe the localization of frames. In our main result we shown that the frame operator preserves this localization and that the dual frame possesses the same localization property. As an application we show that certain frames for Hilbert spaces extend automatically to Banach frames. Using this abstract theory, we derive new results on the construction of nonuniform Gabor frames and solve a problem about non-uniform sampling in shift-invariant spaces. (Received September 16, 2002)

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