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Shidong Li* (shidong2000@yahoo.com), Department of Mathematics, San Francisco State University, San Francisco, CA 94132, and **Tiebin Mi**. *Sparsity-inducing dual frames and sparse signal recovery with coherent frames*. Preliminary report.

When signals are sparse with respect to a coherent frame D , the associated compressed sensing problem becomes more complicated. A notion of *sparsity-inducing dual frames* (SIDF) is introduced aiming at an efficient recovery of x where $f = Dx$ and x is sparse. SIDFs are special/optimal dual frames that induces sparse coefficients x for a sparse signal (or a set of signals) $f = Dx$. As a result, SIDFs are signal dependent. But they are locally stable. This stability will be discussed. A SIDF-based ℓ_1 -analysis approach for the sparse signal recovery and its performance analysis will be presented. Examples will be provided. (Received February 20, 2016)