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Holcomb Ct, Bogart, 30622. *Image and video denoising by means of representations with hornlets.*

The mainstream idea for image model used for image processing claims that an image essentially is a piecewise smooth function and edges of the pieces are also piecewise smooth curves. Taking this conjecture as a start point, many systems for sparse representations of images along objects edges were invented. Among them curvelets, bandlets, contourlets, and shearlets are most popular.

We consider one more very redundant system of functions which we call “hornlets”. This system gives very flexible tool for image representation. It can be used not only for denoising but also for very challenging modern problems like video up-sampling and change the frame rate. (Received January 18, 2011)