light field \([272 \times 368 \times 4 \times 4]\), Teddy EPI \([368 \times 352 \times 4]\) and Doll EPI \([368 \times 352 \times 4]\) (all from [31]), which vary in terms of scene complexity, number of images and spatial resolution. We show that in each case our approach achieves a sparser representation across the complete range of retained coefficients, with PSNR gains of up to 7dB on the Tsukuba light field. The Tsukuba light field has a larger PSNR improvement than the respective Teddy and Doll EPI volumes due to the additional viewing dimension. This means that there exists more redundant information and this is fully exploited by our representation. We also show that the PSNR curves correspond to a subjective improvement in Fig. 14.

![Figure 13: N-term nonlinear approximation of the layer-based representation in comparison to a standard multi-dimensional DWT. Note that the percentage of retained coefficients corresponds to the number of pixels in the original dataset.](image)

![Figure 14: Nonlinear approximation comparison between (a) sparse layer-based representation and (b) standard 3D DWT on Teddy EPI. (c) Original Teddy EPI dataset.](image)

We note that the nonlinear approximation metric is also a good indicator of the compression capability of the representation. In practice, the issue of compression is more complicated due to the additional problem of encoding the locations of the significant coefficients and also to the rate allocation. These issues are beyond the scope of this paper, however, we refer the reader to [32, 33] where these problems are addressed and a complete multiview image compression method is presented.