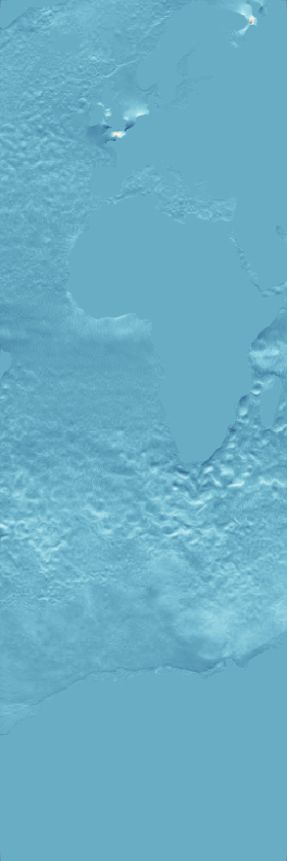
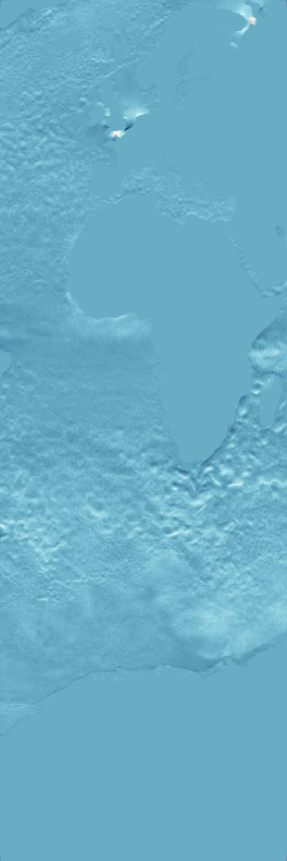
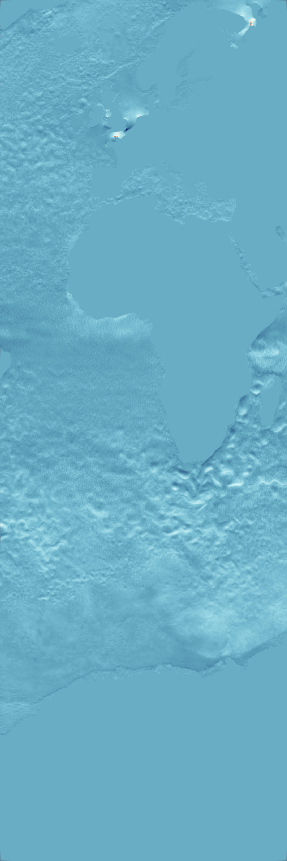
Initial results for encoding of the LLC2160 dataset in the IDX2 format

We converted 32 timesteps of one face (at depth 0) of the U field to IDX2. The dimensions of the face are 2160 x 6480. The encoding uses bricks of size 64 x 64 x 32 (64 samples in X, 64 in Y, and 32 time steps), and we use four levels of wavelet transform. The following chart shows the compression ratio as a function of root-mean-square error.

We further visualize the data by slicing it at a single time step, at lower resolution and lower precision. The following figure shows that at one-fourth and even one-eighth the original resolution, we obtain very high-fidelity visualization of the data. Note that both versions were obtained from a single data layout: we simply extract different amounts of data to get what we need, no recompression is involved.

For visualization, it can be seen that 97% of bandwidth can be saved without compromising visual quality in a significant way. The original slice is of size 53 MB and our one-eighth resolution slice can be extracted from the IDX2 file by fetching only 1.5 MB, which is approximately 3% of the original size.



Resolution 270 x 810, error 0.01, 1.5 MB extracted

Resolution 540 x 1620, error 0.01, 5 MB extracted

Original 2160 x 6480 x float32, 53 MB