Spatial Error Concealment Based on Bezier Curves
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Abstract: We present a geometric error concealment scheme for DCT-based image/video data based on the Bezier polynomials (BP). Our scheme unlike the original proposal of Zeng & Liu, [1], makes use of the average edge direction and local curvature (extracted from healthy blocks around the damaged block) as boundary conditions to create an n-degree BP. The BP is then used to interpolate the edge of the lost block, as well as to directionally reconstruct its low frequency data. In those cases where more than one edge is found to cross the lost area, a cost function defined in terms of the local and global edge curvature is used to find their best match. Results show that our approach provides an almost perfect reconstruction and excellent subjective quality of the restored data, outperforming current linear interpolations schemes in the literature.