Fast dejittering for digital video frames using local non-smooth and non-convex functionals

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We propose several very fast algorithms to restore jittered digital video frames (their rows are shifted) in one iteration. The restored row shifts minimize non-smooth and possibly non-convex local criteria applied on the second-order differences between consecutive rows. We introduce specific error measures to assess the quality of dejittering. Our algorithms are designed for gray-value, color and noisy frames. They outperform by far the existing algorithms both in quality and in speed.