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Regularization Methods in Image Sequence Analysis. Preliminary report.

Applications such as second generation video compression or robot navigation require the computation of the displacement vector field (optic flow) in an image sequence. This problem is ill-posed and variational methods are frequently used to regularize it. They compute the optic flow as the minimizer of some energy functional with a data term and a regularizer that encourages global or piecewise smoothness of the flow field. In this talk a novel class of anisotropic flow-driven regularizers is presented and well-posedness results for the corresponding energy functionals are shown. Experiments demonstrate the usefulness of this nonlinear regularization strategy. (Received October 02, 2000)