ESTIMATION OF TRANSPARENT MOTIONS WITH PHYSICAL MODELS FOR ADDITIONAL BRIGHTNESS VARIATION (TueAmOR8)

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✶ Abstract :

The paper deals with the estimation of complex motion patterns. The complexity is due to (i) the motions of two transparent layers, and (ii) an additional change of brightness in the layers, which can be due to an additive source term, an exponential decay, or diffusion. We present new models and constraints for such complex motion patterns. Experiments on synthetic image sequences demonstrate the performance of our models in conjunction with a total least–squares parameter estimation scheme. Crucial ingredients of this scheme are new filter families of derivative filters of up to fourth order. We present a procedure for how to construct appropriate filter families for the introduced models.

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