

## NONLINEAR DIFFUSION FILTERING IN IMAGE PROCESSING

O. SUBOČ, R. ČIEGIS,, A. KRYLOVAS and M. MEILŪNAS

*Vilnius Gediminas Technical University*

Saulėtekio av. 11, LT-10223 Vilnius-40, Lithuania

E-mail: {os,rc,akrl,mm}@fm.vtu.lt

PDE based methods are widely used in image processing for smoothing, edge detection and restoration [2]. When filtering is based on diffusion, it is desirable to apply it locally, depending on properties of the image itself. This became possible applying an inhomogeneous process that reduces the diffusivity at those locations which have a larger likelihood to be edges [4]. The likelihood is measured by gradient of gray level function of the image.

We consider filtering with Gaussian kernel, linear and nonlinear diffusion methods [1]. It is demonstrated that even for nonlinear diffusion filters the explicit Euler scheme is more efficient than the implicit its version.

New possibilities of nonlinear diffusion filters arise if slow and fast diffusion are included into the mathematical model [2; 3]. We present results of computational experiments and compare the efficiency of different diffusion filters.

### REFERENCES

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