Detection quality metrics

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Although many video based smoke-detection algorithms have been developed and applied in various experimental or real life applications, the standard method for evaluating their quality has not yet been proposed. Such methodology suitable for smoke-detection algorithms testing and evaluation is presented.

Measures are divided in two main categories: global and local measures. Global measures are used for evaluation of smoke detection, where images represent the smallest unit of detection. When evaluating on local scale, pixels are used as the smallest unit of detection. Different global and local measures are introduced for evaluation of various aspects of detection.

Smoke is by its nature an amorphous phenomenon without exact borders and edges, so a fuzzy approach to evaluation can also be used in order to minimize the evaluation error.

Detailed article about evaluation measures will soon be available in:

T. Jakovcevic, L. Bodrozic, D. Stipanicev, and D. Krstinic,

"Wildfire smoke-detection algorithms evaluation,"

VI International Conference on Forest Fire Research,

Coimbra, Portugal, 15-18 November 2010; p. Accepted for publication.