

Methods based on fractals have been implemented in various fields such as medicine, image compression, virtual terrain generation and seismology. There are also different applications of methods based on fractals in smoke detection, taking into account visual self-similarity of smoke. Some methods use fractal curves for detection of clusters in hyper-dimensional space for smoke-pixels identification. Examples of fractal based methods in smoke detection are given bellow:

N. Fujiwara, K. Terada,

“Extraction of a Smoke Region Using Fractal Coding”,

International Symposium on Communications and Information Technologies, Japan, 659-662, 2004.

http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=1413797

P. Guillemant, J. Vicente,

"Real-time identification of smoke images by clustering motions on a fractal curve with a temporal embedding method",

Optical Engineering 40(04), 554-563, 2001.

http://spie.org/x648.html?product_id=414160

J. Vicente, P. Guillemant,

"An image processing technique for automatically detecting forest fire",

International Journal of Thermal Sciences, Vol. 41, Issue 12, 1113-1120, 2002.

<http://linkinghub.elsevier.com/retrieve/pii/S1290072902013972>
