Using the Fractal Dimension to Diagnose Cancer

Koryavka, Nataliya

Now there are many ways to detect cancer in its early stages, but they are inaccurate and final results will be obtained through quite a long time. So it is important to find a method of diagnostics, which will eliminate these problems. Not long ago, scientists from the United States in their article said that the adhesion maps of cancer and normal cells` surface are fractal structures, but their fractal dimensions are very different (adhesion maps are images obtained using an atomic force microscopy). Dimension in general can be understood as follows: the position of the point in the coordinate system is denoted by two parameters, x and y, so the dimension of coordinate system is 2.This is an integer dimension. But, considering other definitions of dimension, you can get non-integer results. One such definition was used in this study (definition capacitive dimension). I create the algorithm and the computer program which can count the dimension of the image which loaded in the program. Program has got a graphical user interface, simple and convenient to use. Also the program can generate some fractal structures. The program has been tested and gave good results. This program allows much faster and more correctly diagnose cancer, thereby increasing the chances of the patient will live longer. Also, the material costs of expensive analyze and inspections are significantly reduced.

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