Topic for Bachelor Thesis
under supervision of Lara Daw[1] and Guendalina Palmirotta[2]

Lët'z box-counting!

Short description: The main aim of this project is to illustrate the map of our country, Luxembourg, using box-counting method. To this end, this thesis will be divided into two parts. A theoretical part where the student will learn the necessary tools from fractal analysis in order to use it in the experimental part, where a program will be built that achieves the main aim.

The topic can be adapted according to the student's wishes and the precise content will be agreed together with the student, taking into account her/his special background.

Examples of literature:

(i) Falconer, Kenneth. Fractal geometry: mathematical foundations and applications. Book, John Wiley & Sons, 2004.

(ii) Wikipedia site: Minkowski–Bouligand dimension

There are also many other sources.

Requirements: Analysis and Programming skills.
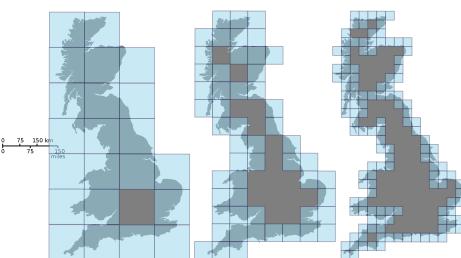
Languages: English, French (or Luxembourgish).

Figure 1: Example of estimating the box-counting dimension of the coast of Great Britain (source: Wikipedia).

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