عنوان مقاله:

A novel algorithm for constructing the Sierpiński triangle and the Koch snowflake using circumscribed circles

محل انتشار:

سومین کنفرانس بین المللی محاسبات نرم (سال: 1398)

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خلاصه مقاله:

This paper investigates a new approach to the generation of the Koch snowflake introduced by Niels Fabian Helge von Koch and the Sierpiński gasket, also known as the Sierpiński triangle formed by Wacław Sierpiński. This approach uses Iterated function systems (IFS) and for the formation of these fractals circumscribed circles are used as an alternative for the former procedure which was the only existing process and the method is used to form non-randomized fractals. GeoGebra was used to form the images in this paper due to its great accuracy and high efficiency. Also proposed method developed by C++ (CBF) to evaluate some metrics that leads to simple design process in handy and computerized models. The main goal is to develop a more accurate and easy procedure to generate these fractals to minimize errors which is crucial to the field of fractal geometry as a cause of growth in errors as the stage of the construction tends to infinity. Fractal geometry is one of the most beneficial areas in geometry as it can expand to all branches of modern sciences.

کلمات کلیدی:

Sierpiński triangle, Koch snowflake, fractals, circle based fractal design.

لینک ثابت مقاله در پایگاه سیویلیکا: