# Fractal application in data compression

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Exploring possibilities to improve a compression algorithm developed at the European Space Agency

## Algorithm description

- Designed for compression of telemetric time series of satellites and deep space probes
- Inspired by fractals – namely by midpoint displacement method and 2D fractal terrain
- Removes typical error of a system and keeps only the important measurements

## Testing method

- Both algorithms were tested on Rosetta's telemetry
- Algorithms were compared by calculating metrics like Mean Squared Error, Relative Absolute Error and Root Relative Squared Error

## Conclusion

- Modified algorithm can achieve up to 25% higher compression rate
- Average value on tested data was about 6%
- As expected, modified algorithm needed significantly more resources to compress data