

Abstract Submitted
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Skeleton and fractal scaling in complex networks KWANG-IL GOH¹, GIOVANNI SALVI, BYUNGNAM KAHNG, DOOCHUL KIM, Seoul National University — We find that the fractal scaling in a class of scale-free networks originates from the underlying tree structure called skeleton, a special type of spanning tree based on the edge betweenness centrality. The fractal skeleton has the property of the critical branching tree. The original fractal networks are viewed as a fractal skeleton dressed with local shortcuts. An in-silico model with both the fractal scaling and the scale-invariance properties is also constructed. The framework of fractal networks is useful in understanding the utility and the redundancy in networked systems.

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