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# Hamiltonian triangular refinements and space-filling curves

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## Abstract

We introduce here the concept of Hamiltonian triangular refinement. For any Hamiltonian triangulation it is shown that there is a refinement which is also a Hamiltonian triangulation **and the corresponding Hamiltonian path preserves the nesting condition** of the corresponding space-filling curve. We prove that the number of such Hamiltonian triangular refinements is bounded from below and from above. The relation between Hamiltonian triangular refinements and space-filling curves is also explored and explained.

*Key words:* Hamiltonian triangulations, space-filling curve, mesh refinement, longest edge

*1991 MSC:* Primary 65M50, 65N50, Secondary 65N30

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