

Topological Structures in the Endoplasmic Reticulum: Structure, Function and Formation

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The endoplasmic reticulum (ER) has long been considered an exceedingly important and complex organelle in eukaryotes. It is a membrane structure, part folded lamellae, part tubular network, that both envelopes the nucleus and threads its way outward, all the way to the cell's periphery.

Refined imaging of the ER via electron microscopy has recently revealed beautiful and subtle geometrical forms, which some have called a “parking garage for ribosomes”. I'll review the discovery and physics of Terasaki ramps and discuss their relation to cell-biological questions, such as ER- and nuclear-membrane re-organization and tube-to-sheet interconversion.

Rather than being a footnote in a textbook on differential geometry, these structures suggest answers to a number of the ER's structure-function problems.

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**MPIDS, Seminar room 0.79,
Am Faßberg 17, Göttingen**

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