



Hyperbolic paraboloid. Olivier model, c. 1830; Candela Cuernavaca chapel, 1958; Fallacara Hypar Gate, 2016

## Ruled surfaces in Architecture

### Links between Olivier's string models, the arts and architecture

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Ruled surfaces have always been commonly used in Architecture, even as the search for more complex shapes has increased over time. Problematic stereotomy connections demanded new solutions, and with Gaspard Monge (1746-1818), descriptive geometry attempted to solve many of them. Théodore Olivier (1793-1853), one of his disciples, designed, from 1830 onwards, a set of string models with movable parts that represent dynamically ruled surfaces, some of them never before applied to construction. Soon, new needs and new forms, new materials and new construction techniques, as well as a new aesthetics, all brought out even more possibilities that might have been originally inspired by some of Olivier's models. Even artists were not immune to this influence.

Nowadays, with parametric design assuming a prominent role, it is interesting to realize that this parametric approach was already in Olivier's mind when he conceived his dynamic string models. In parallel, contemporary digital fabrication processes are enabling complex ruled surfaces to be made out of stone, concrete, iron, and other materials. As always, new paths are being forged, and special attention should be paid to those that are anchored in tradition.

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