Parametric Design

Generative Design Systems (DECO2013)
Parametric Design

- Parametric design involves varying a set of values that define an instance of a design.
  - For example, parameters for designing a box might include width, height, wall thickness, etc.

- Combining optimisation techniques with parametric representations of a design allows the design space to be searched.
  - Many possible optimisation techniques exist, including evolutionary systems.
Beijing National Stadium

• “...a parametric model in Digital Project of the stadium roof, beginning from wireframe roof geometry, and subsequently adding a suite of adaptable user-feature components to build the box girder and connector element assemblies.”
Beijing National Stadium

“The team ... assessed different methods for curving the steel geometry in 3D space and compared resulting effects in detail.”
Beijing National Stadium

“... the team subsequently reused the 3D Digital Project model to simplify the stadium roof structure and reduce steel quantities. Parametric modeling in Digital Project enabled basic redesign in a matter of weeks, and the stadium was completed on time.”
edge tolerance will be smaller than 2cm.
the center line of the beams have to follow the reference curved surface.
ie. center lines cross at one point.

边缘偏差小于2cm。
梁的中心线与参考曲面一致，
即，中心线交于一点。
Resources

- Gehry Technologies
  - http://www.gehrytechnologies.com/

- Design ReForm.net
  - http://designreform.net/