

Technion-Israel Institute of Technology
Computer Science Department
Center for Graphics and Geometric Computing

CGGC Seminar

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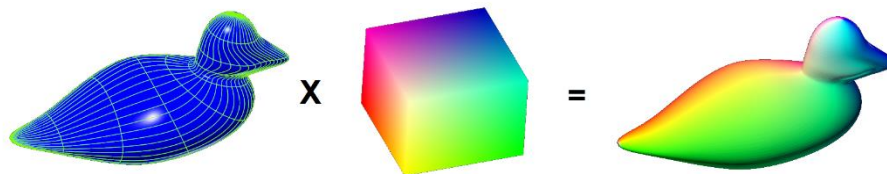
Fabricating Functionally Graded Material Objects Using Trimmed Trivariate Volumetric Representations

We will introduce methods that allow direct slicing and manufacture of freeform functionally graded material (FGM) objects using additive manufacturing (AM).

The FGM objects received as input are specified as complexes of trimmed parametric trivariate volumetric cells, and contain the design for both the geometry and (heterogeneous) material composition of the model.

We present efficient methods that enable the fabrication of general volumetric freeform designs, following the modeling generality of contemporary B-rep geometric modeling systems, while fully exploiting multi-material 3D printers.

Our methods allow the application of any material function to the volume of a model, from simply another (possibly trimmed) trivariate function, through a volumetric discrete texture to a procedural function. We will also demonstrate these introduced capabilities by showing fabricated examples for several functionally graded material objects, manufactured using a modern multi-material 3D printer.



The lecture will be held on Sunday, 11.6.2017, at 15:00, Taub 401

הזמנה זו מהווה אישור כניסה עם רכב לטכניון