Software Lab:

Develop an application to compute lines of flux from Finite-Element simulation results (Cevotec GmbH)

Setting

Cevotec GmbH is a startup company which automa-
tizes fiber patch placement for automated manufactur-
ing of complex carbon parts. Cevotec was founded in
February 2015 and currently offers the hardware prod-
uct “SAMBA” for manufacturing the parts and the soft-
ware product “Artist Studio” for modelling and optimiz-
ing the patch layup as well as performing the robot sim-
ulation including collision detection.

Within the next development cycle the software prod-
uct will be enhanced to allow an optimization w.r.t. the
lines of flux coming from a Finite-Element analysis in
order to create parts that are highly optimized w.r.t. the
applied loads and forces. As a first step to this approach, the results of a Finite-Element
analysis have to be analyzed and the lines of flux have to be computed, discretized and
projected onto the original CAD surface. This part will be the task of your software-lab and
should become part of our future software product.

Task

Create an application that

- Reads Finite-Element results into a database
- Computes and extracts the lines of flux w.r.t. the Finite-Element analysis result
- Projects the extracted lines onto the CAD surface and creates geometric curves

Supervisors

Dr. Christian Sorger, Cevotec GmbH, christian.sorger@cevotec.com

References
