

Diplomarbeit / Studienarbeit

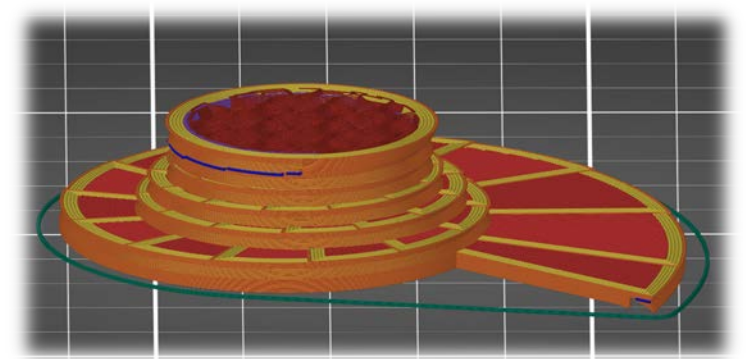
Design and additive manufacturing of cable drums with variable radius



Cable robots are parallel kinematic systems that use flexible cables instead of rigid connecting elements. This allows large areas to be covered at high speeds. The cables are usually wound onto drums, with the drum radius determining the transmission ratio between angular speed and cable speed as well as between torque and cable force. The manufacturing of drums with a variable radius is possible using 3D printing processes. These allow the transmission ratio to be adjusted along the length of the cable.

Possible tasks are:

- Creating the drum geometry from the desired cable path, ideally as **software in Python**
- **CAD design** of a winch structure to integrate the drum
- **Literature research and tests** on controlled single-layer winding of cables



Kontakt

Dipl.-Ing. Jonas Bieber
jonas.bieber@tu-dresden.de