

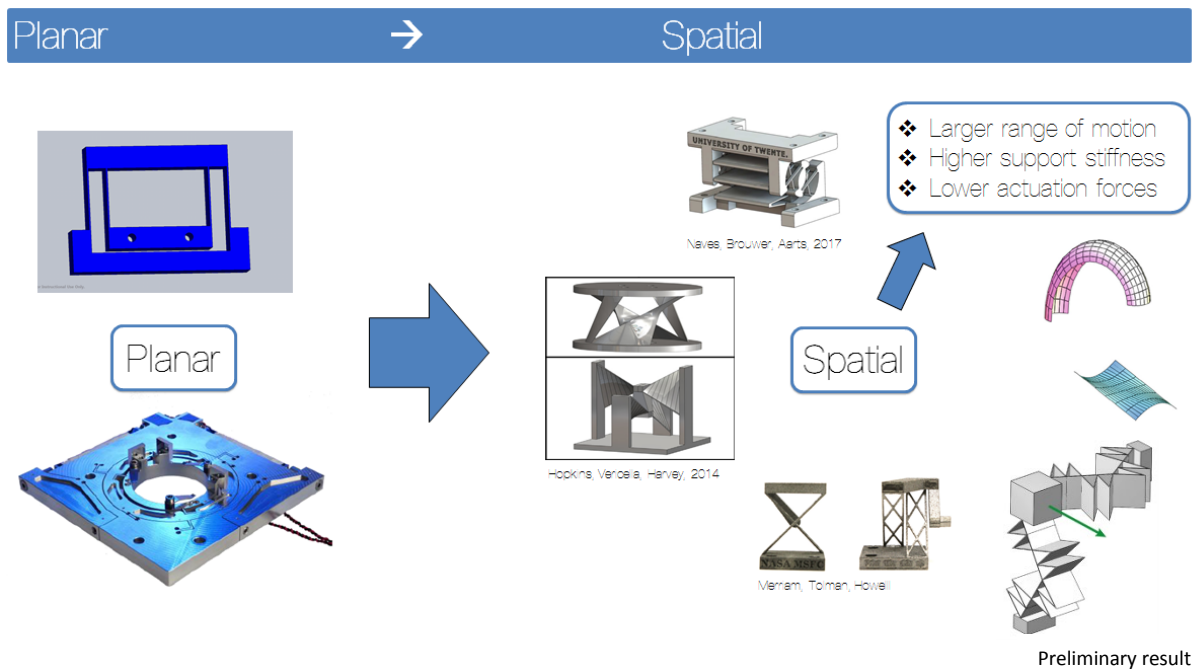
# 3D compliant mechanisms: Master thesis projects

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## Background

Compliant mechanisms are widely used because they totally eliminate friction and play. However, they are generally bulky and have a small range of motion. Truly 3D compliant mechanisms are still hardly explored but show a lot of potential. Now that 3D (steel) printing technologies are improving, these mechanisms are becoming a realistic option.



## Master Thesis project(s)

Design and 3D print the first linear guide based on truly 3D flexures (=leaf springs which are curved, twisted, etc.). For this, first you will search and assess different 3D shapes and their properties. This can be done using Finite Elements, but there are other approaches like origami-like or Pseudo-rigid body representations. From this overview, you pick shapes that seem promising (we have already found some) and you design and build the linear guide or another mechanism of your own choice. Budget for advanced 3D printing techniques is available.