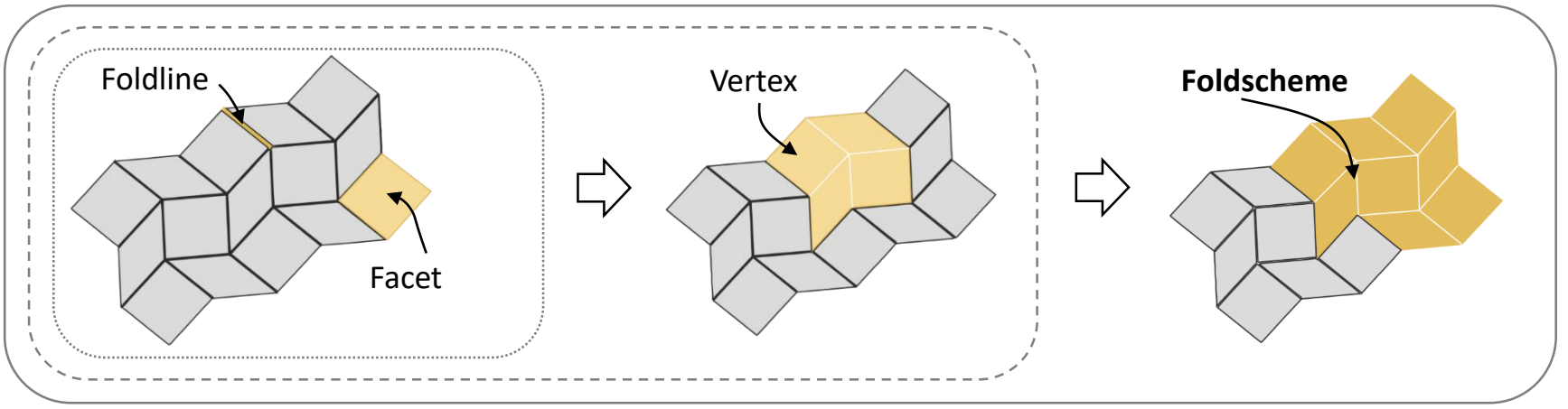
Foldscheme Collection

Institute of Mechanism Theory, Machine Dynamics and Robotics
RWTH AACHEN UNIVERSITY

Folding Mechanism



Collection Entry

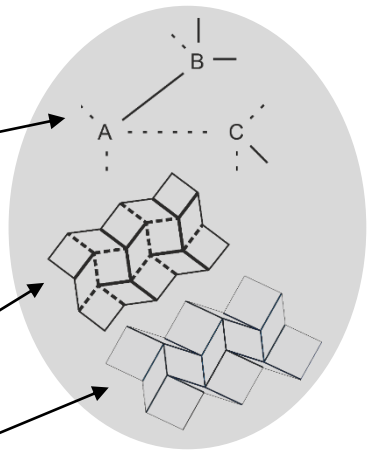
Description of the structure
Required vertices and number of Foldlines:
Miura-Ori 3(4R)

Exemplary for the Miura-Ori: Three vertices each with 4 Foldlines

Structural Representation
Simplified foldscheme representation with identification for mountain and valley folds, the letters symbolize vertex centers

Pattern representation

3D representation of an exemplary motion



Name

Main directional motion
- translational
- cylindrical
- screwing
- spherical

Geometric space formula

Degree of freedom

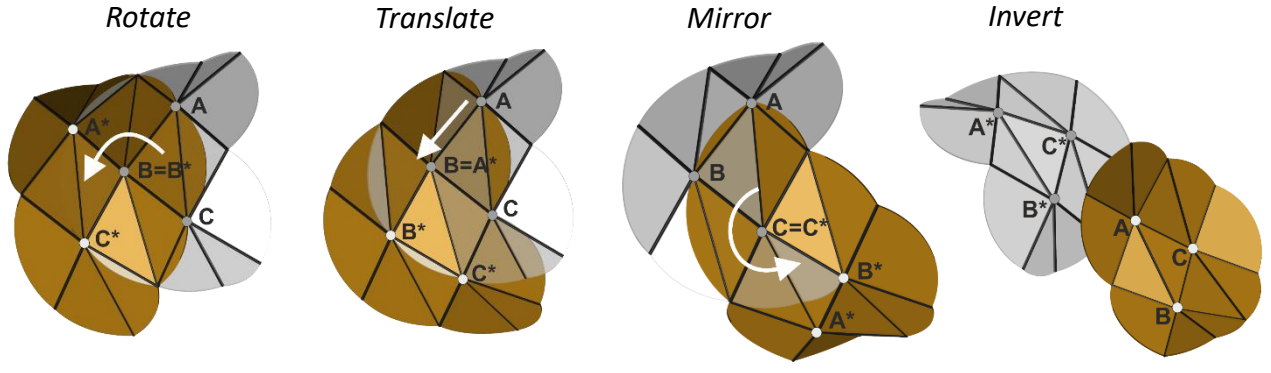
Vertex-Information
Generalized angles for each vertex, e.g. Miura-Ori:

$A(4R) = \vee(\pi-\alpha) \vee (\pi-\alpha) \wedge (\alpha) \wedge (\alpha)$

$\wedge$ mountain, $\vee$ valley
Angles for vertex A with 4 foldlines

Fold line-Information
Generalized lengths
for the shown foldscheme

Combinations

Key Figures
Key Figures
If required, key figures for specific applications

Four different foldscheme operations for the design of folding mechanisms