

14-15-16 february 2017
Structural Aesthetics and Self-Organization
prof. Chris William, University of Bath

Luca Gambini

Andrea Valli

Mattia Ricci

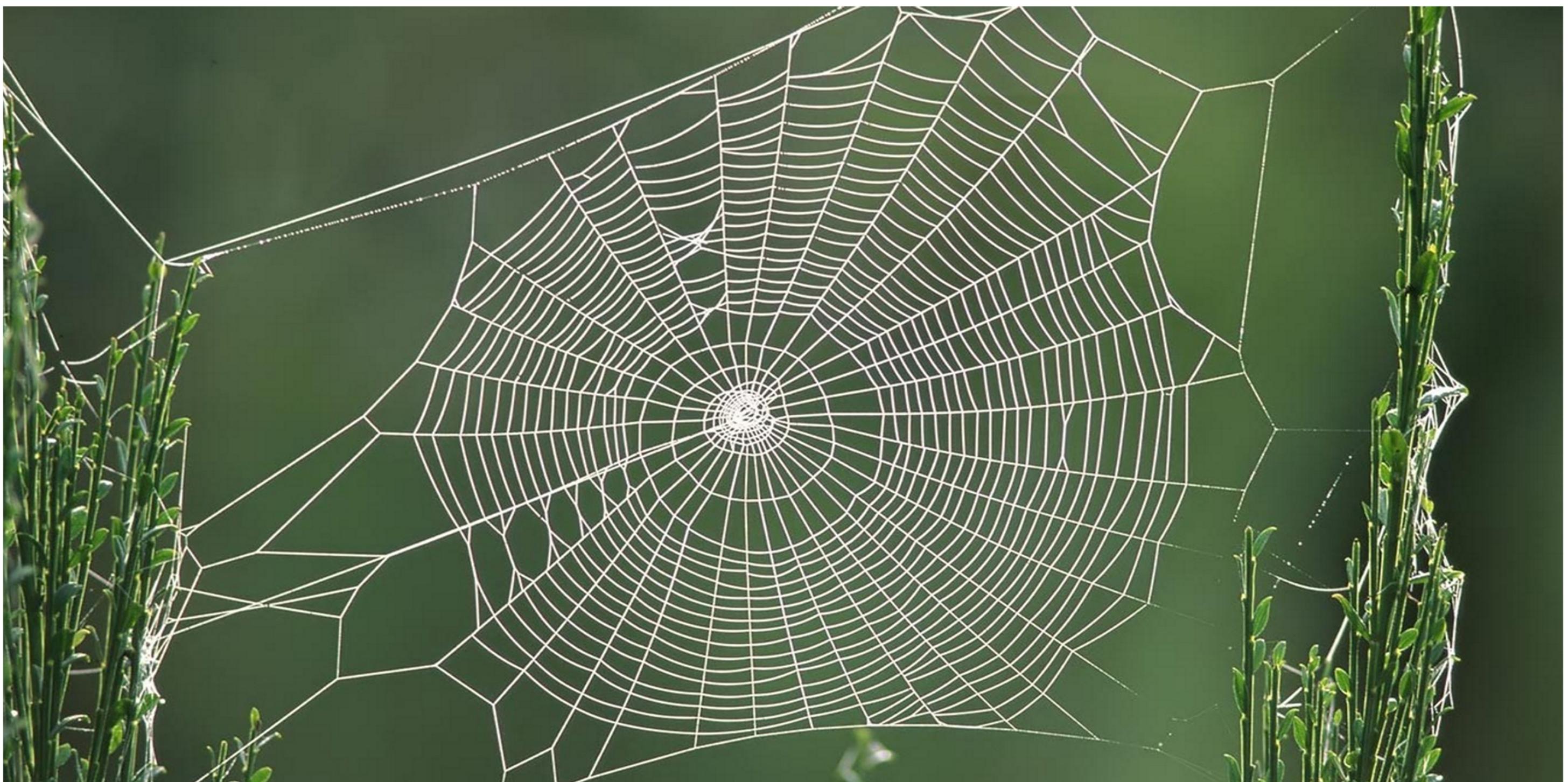
SPIDER WEB

Giulio Fini

Said Quqa

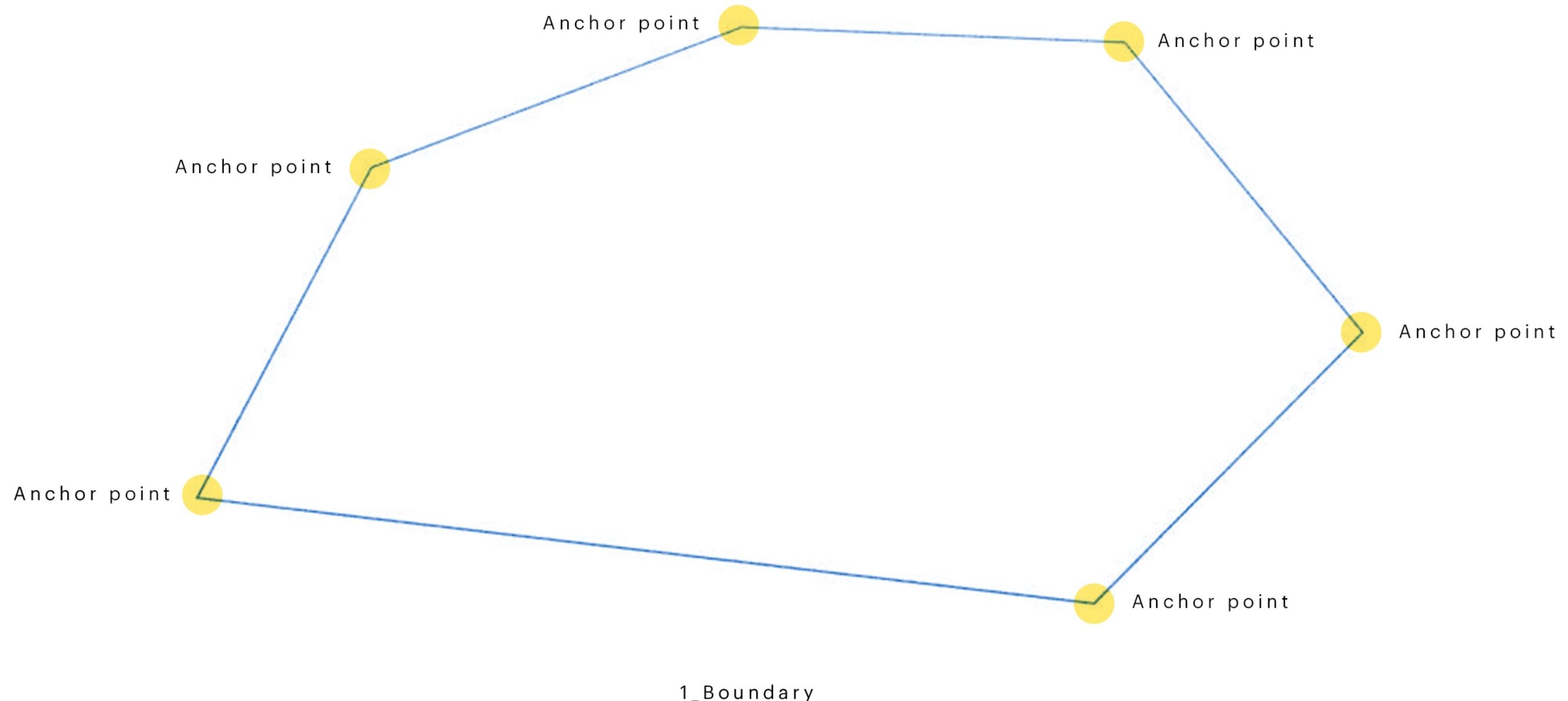
THE CONCEPT

THE CONCEPT

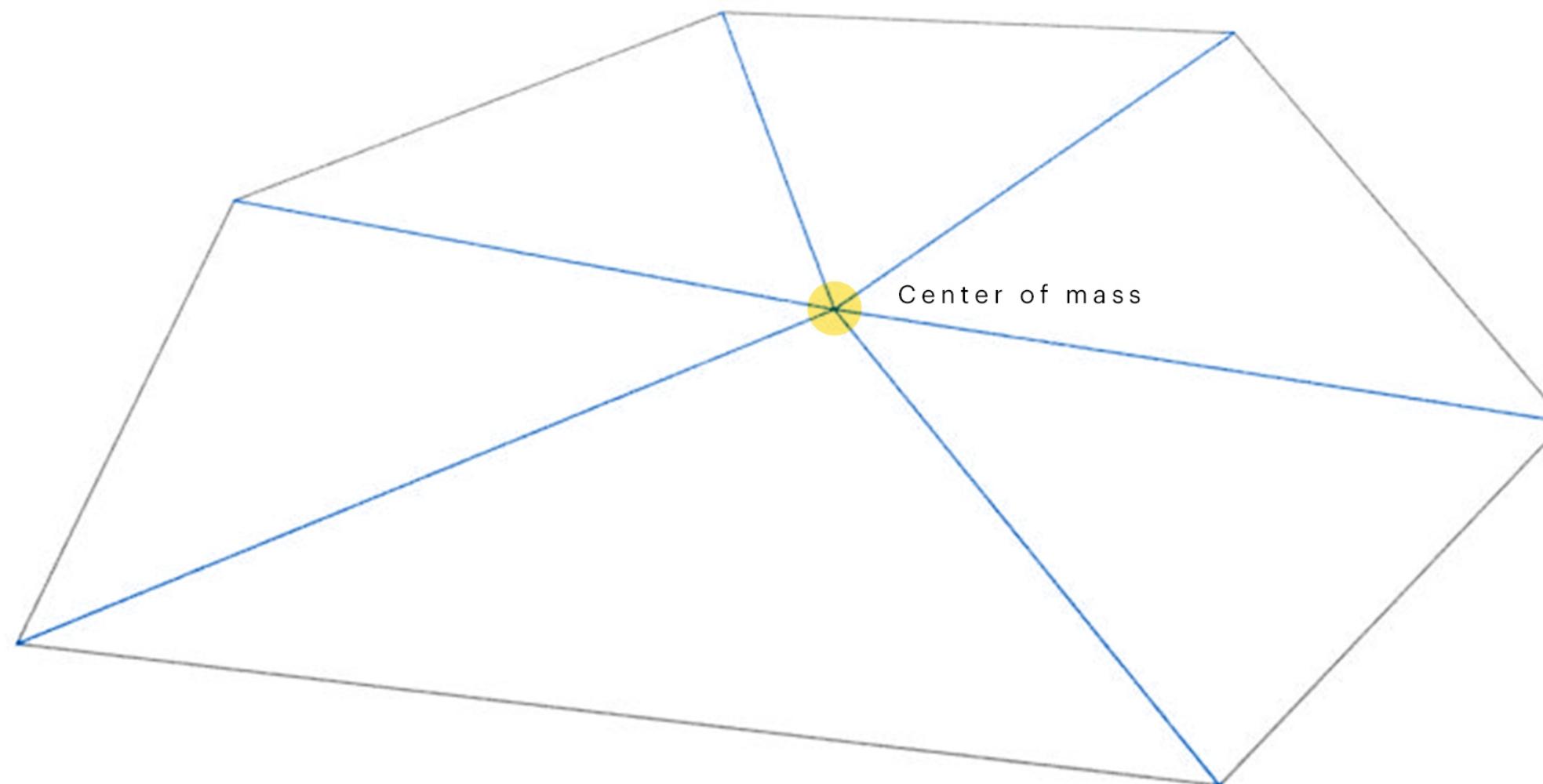


THE WEB STRUCTURE

THE WEB STRUCTURE

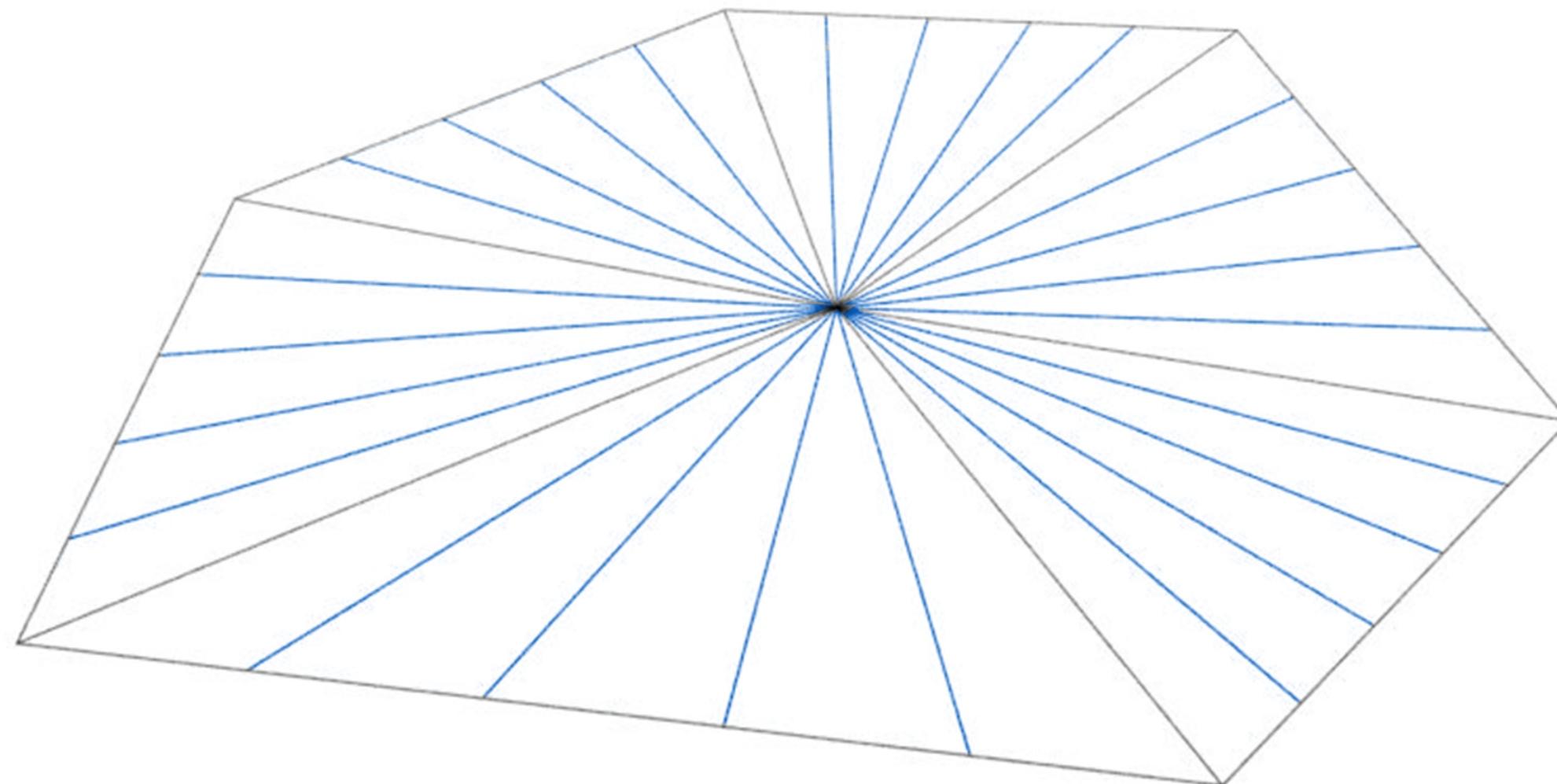


THE WEB STRUCTURE



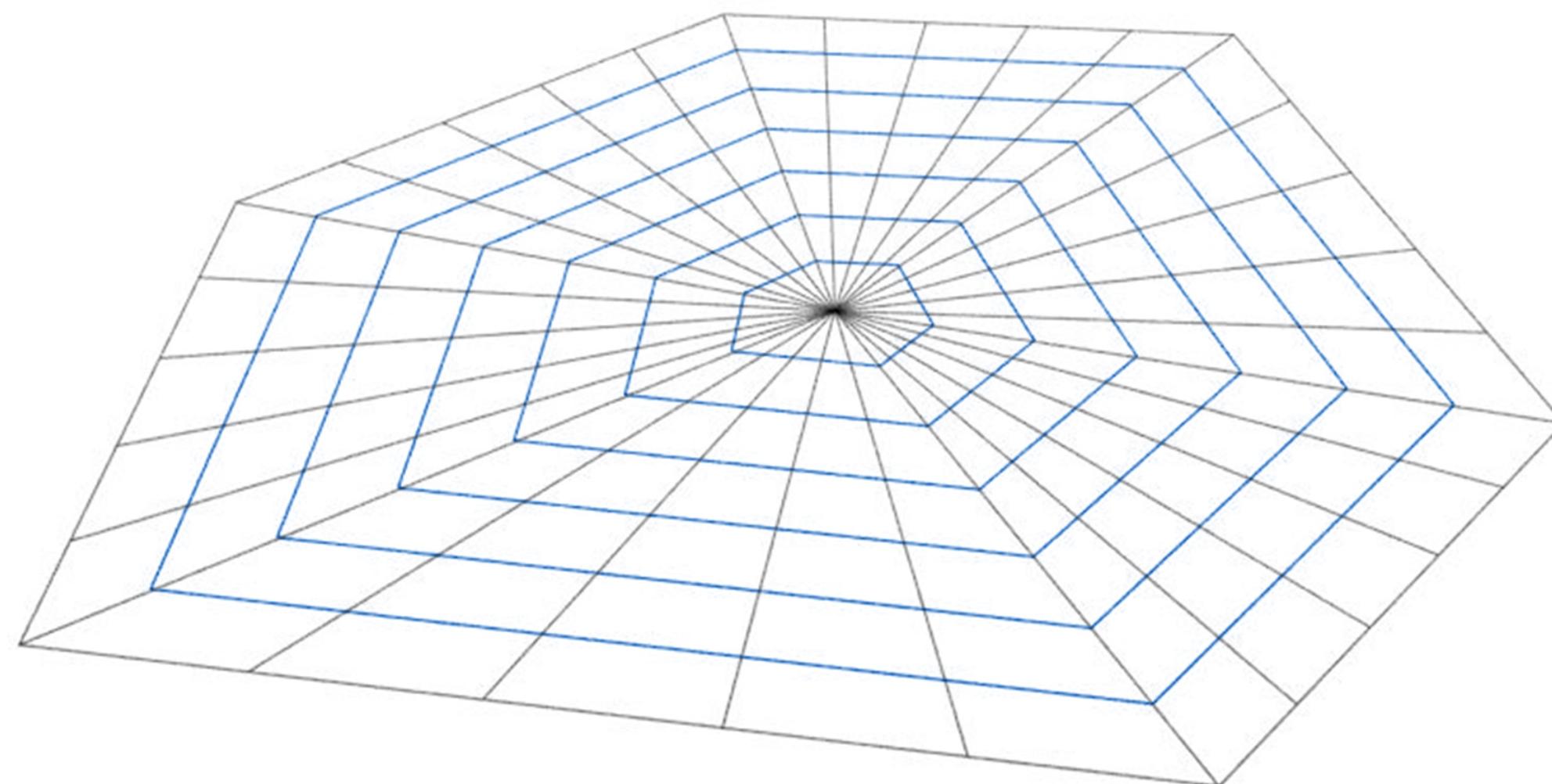
2_Main radial structure

THE WEB STRUCTURE



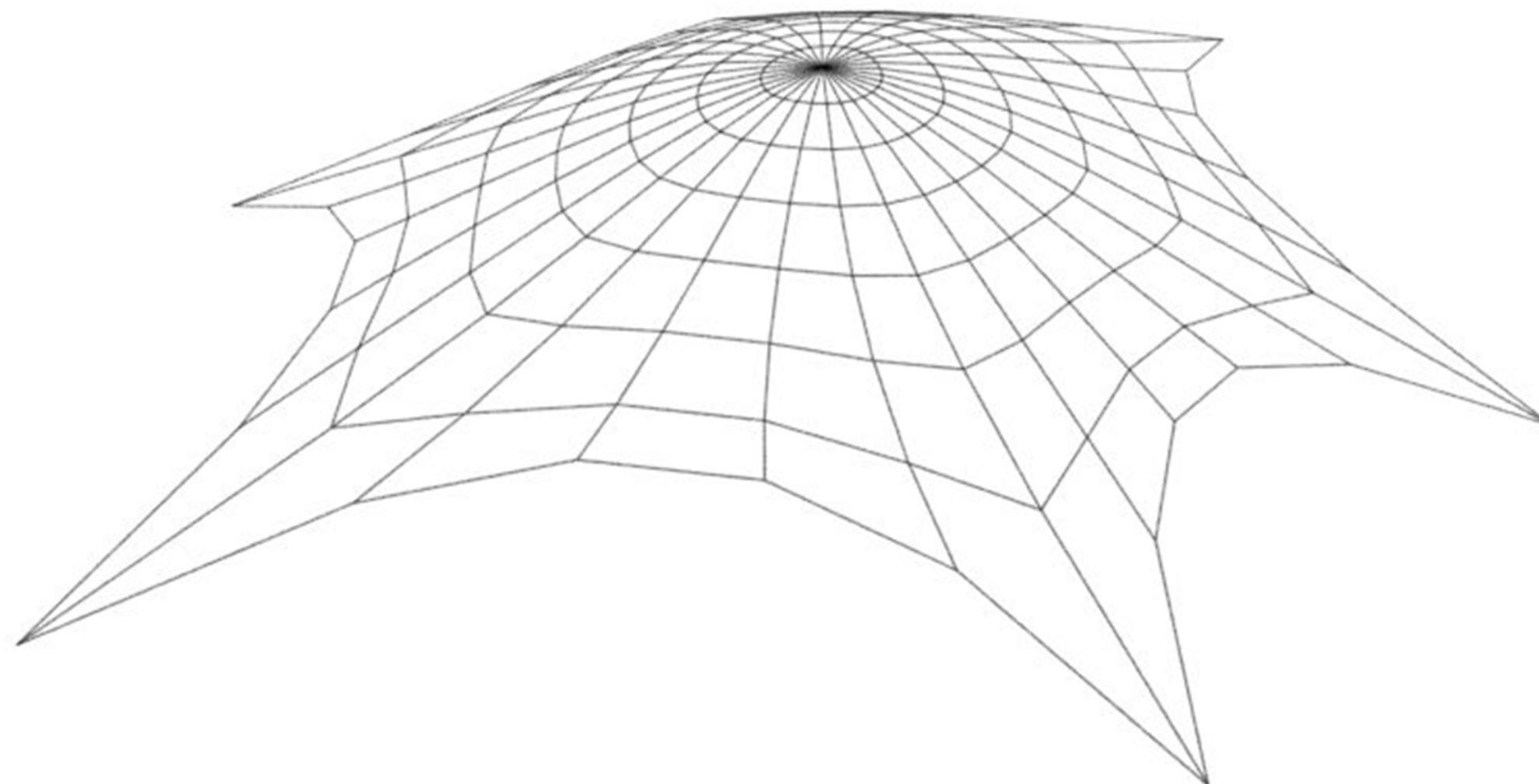
3_Secondary radial structure

THE WEB STRUCTURE



4_tangential structure

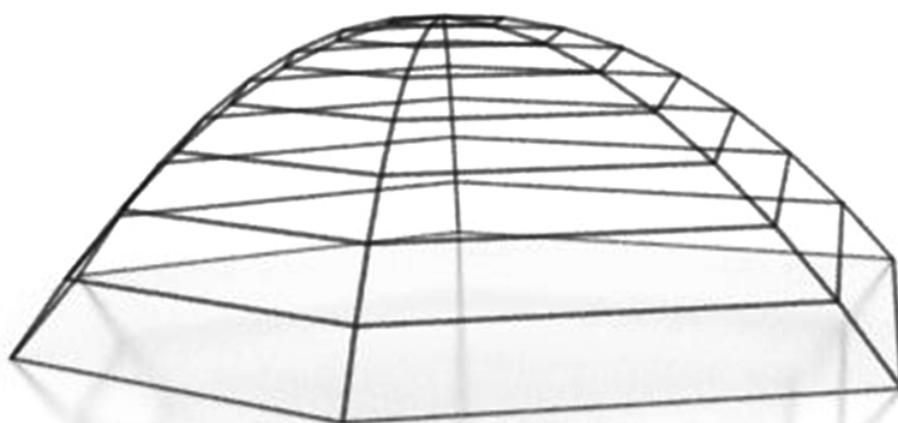
THE WEB STRUCTURE



5_Final configuration

VARIATIONS

VARIATIONS

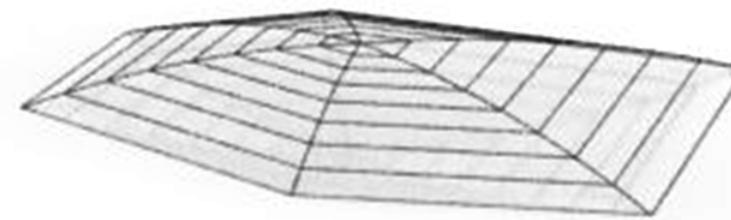


Early algorithm



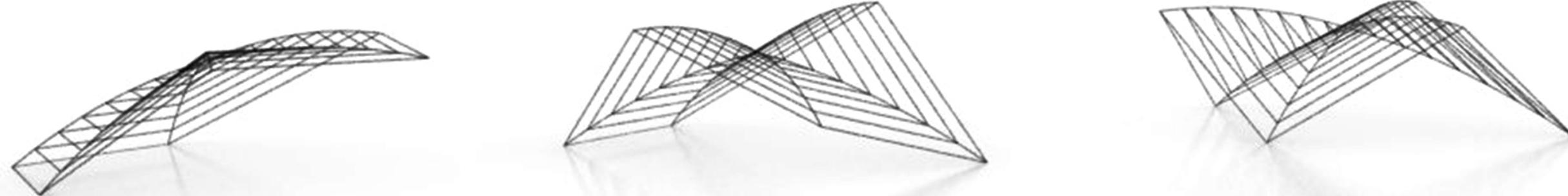
Advanced algorithm

VARIATIONS



Varying boundary polyline

VARIATIONS

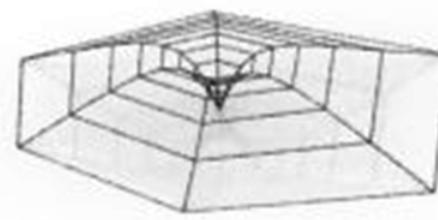


Varying anchor points height

VARIATIONS



- Tangential stiffness: 100
- Radial stiffness: 200
- Gravityt factor: 80



- Tangential stiffness: 40
 - Radial stiffness: 400
 - Gravityt factor: 250
- Center of mass ass anchor



- Tangential stiffness: 0
- Radial stiffness: 380
- Gravityt factor: 160

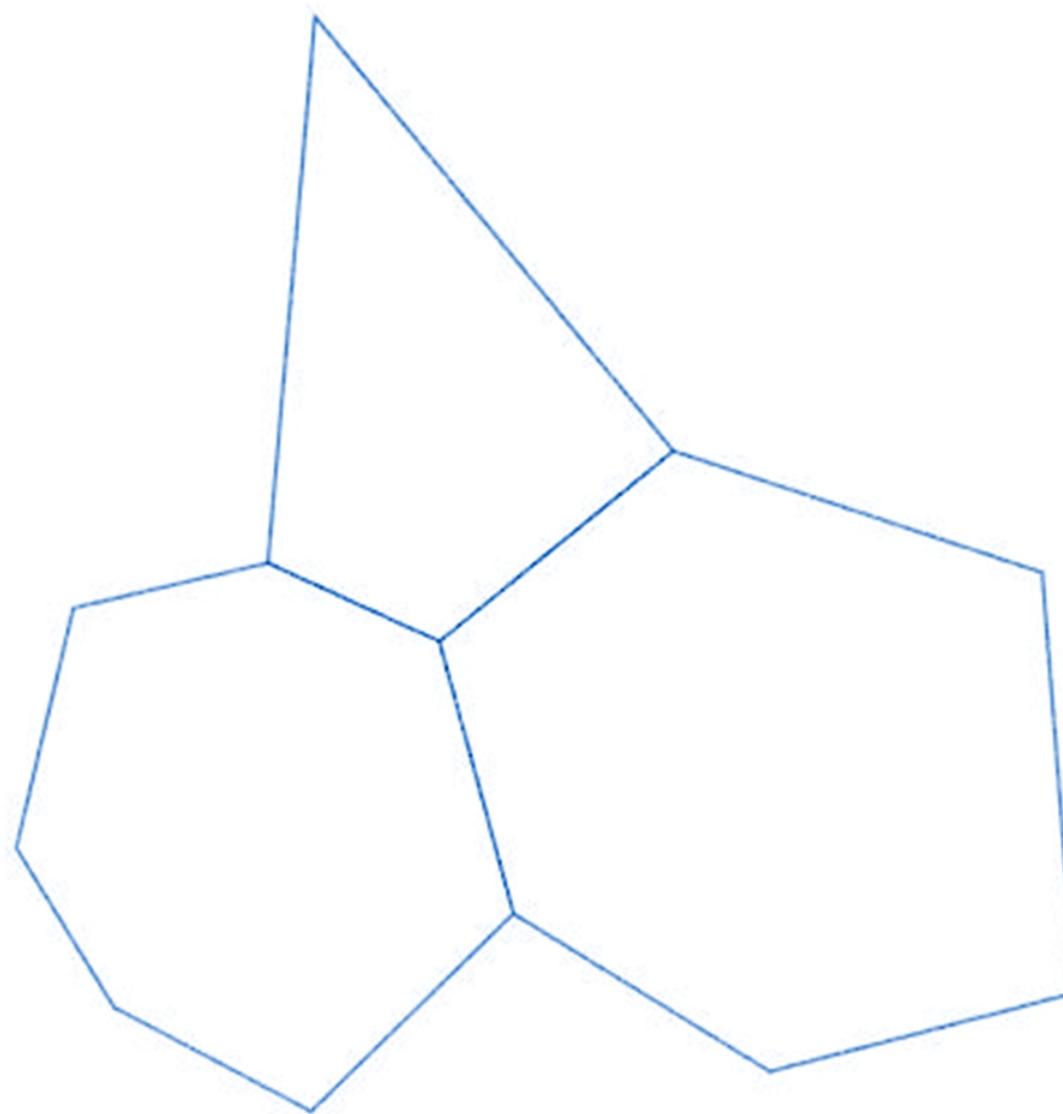


- Tangential stiffness: 0
- Radial stiffness: 380
- Gravityt factor: -100

Varying algorithm parameters

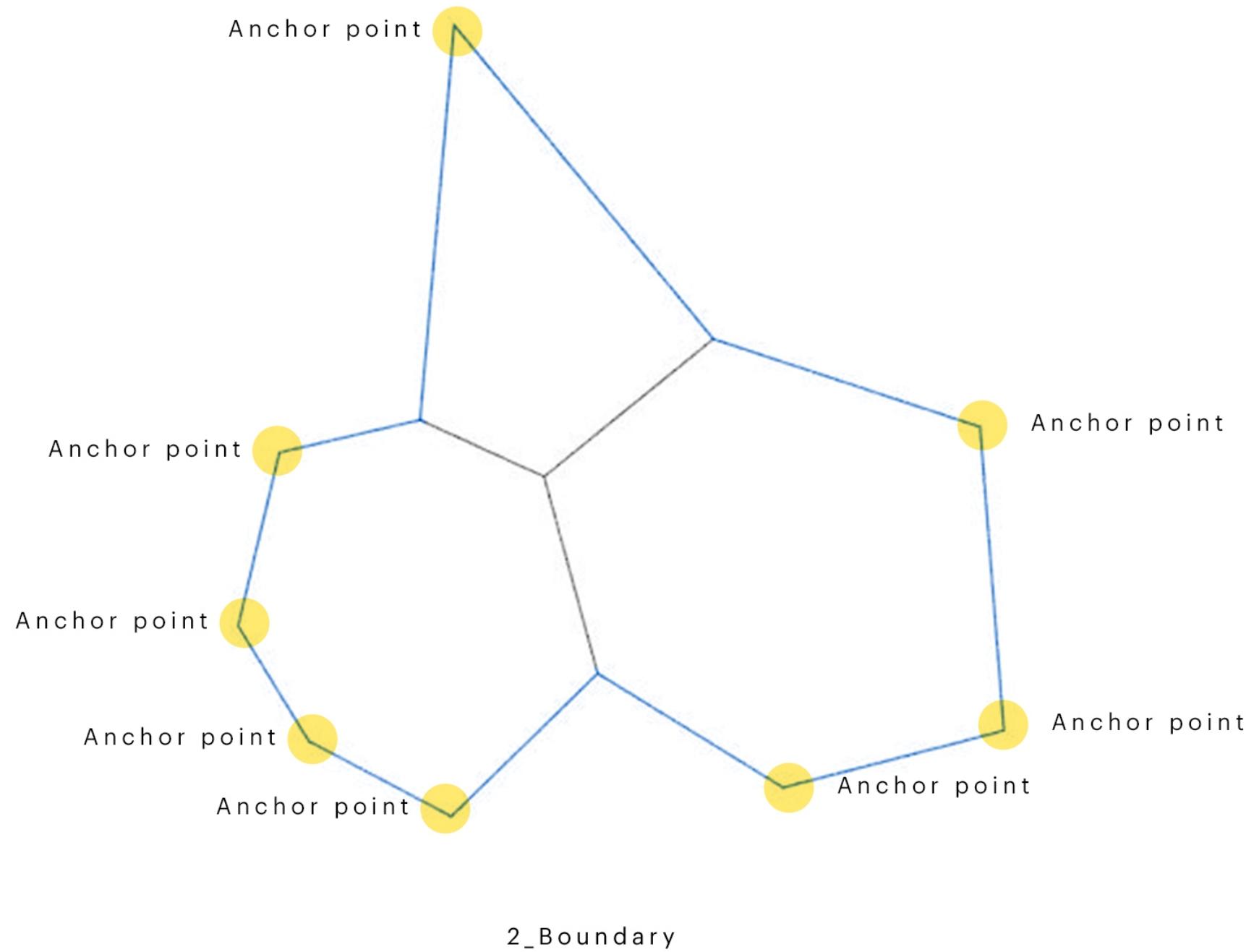
THE MULTIPLE STRUCTURES

THE MULTIPLE STRUCTURES

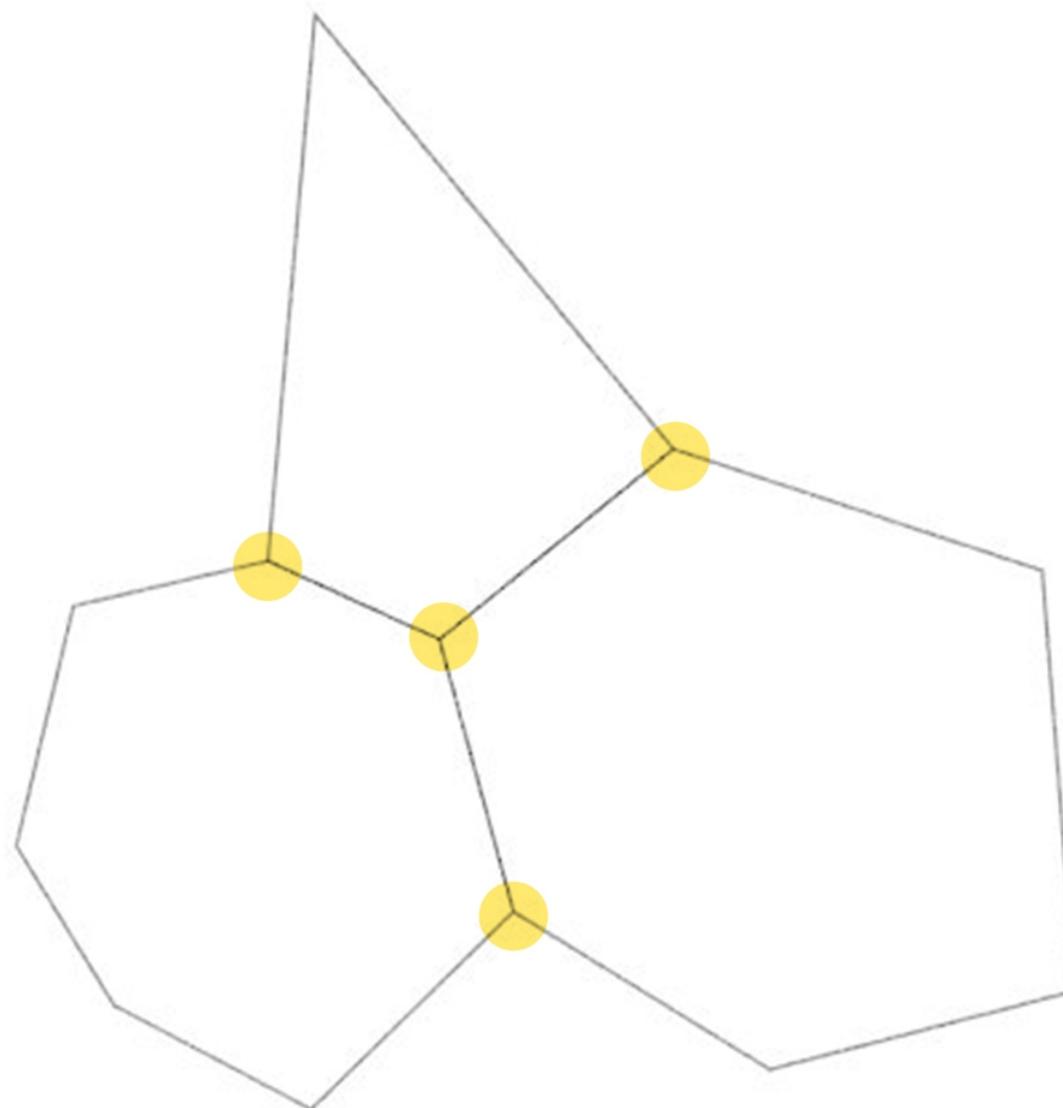


1_Multiple boundaries

THE MULTIPLE STRUCTURES

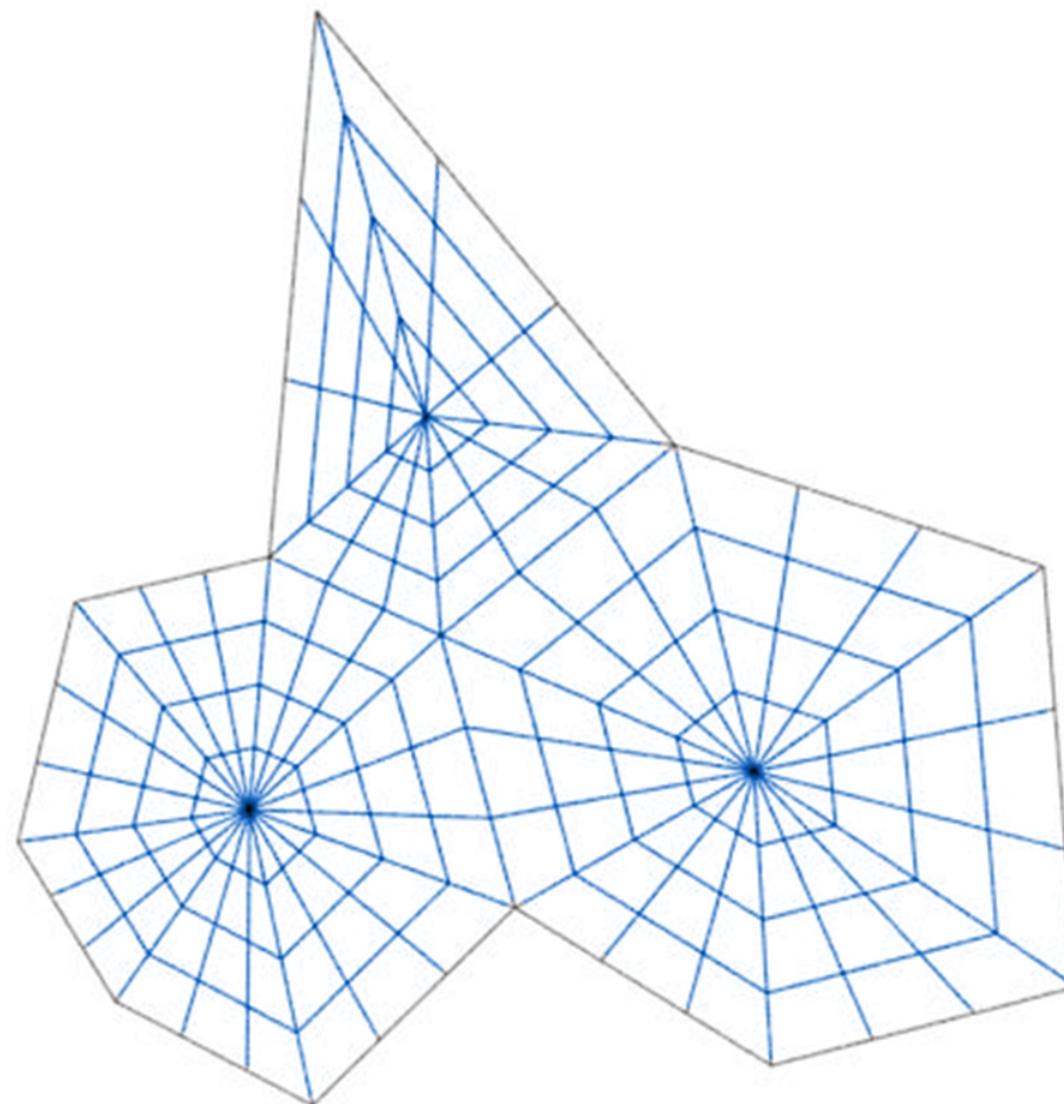


THE MULTIPLE STRUCTURES



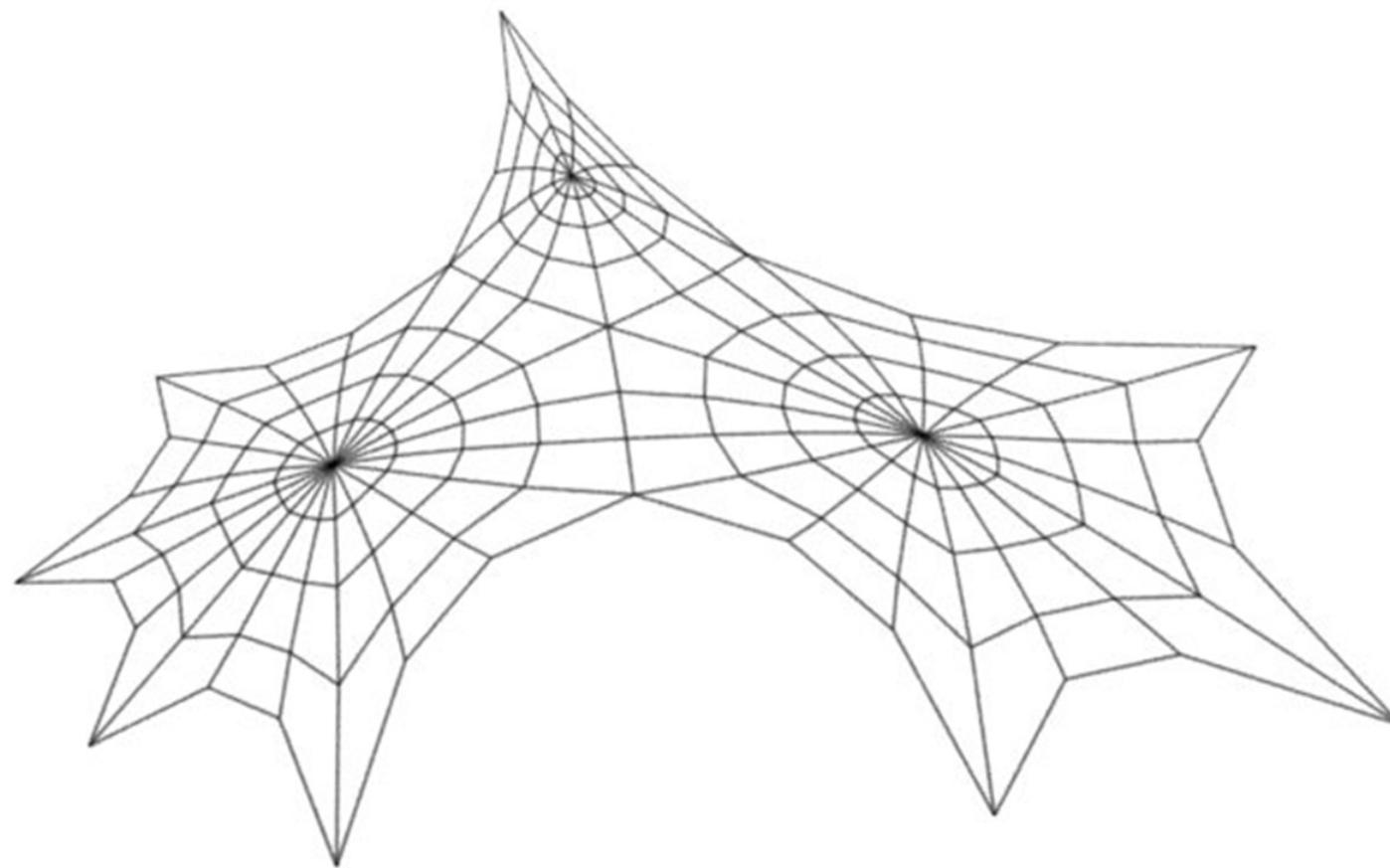
3_Common points are discarded from anchors

THE MULTIPLE STRUCTURES



4_Inner structure

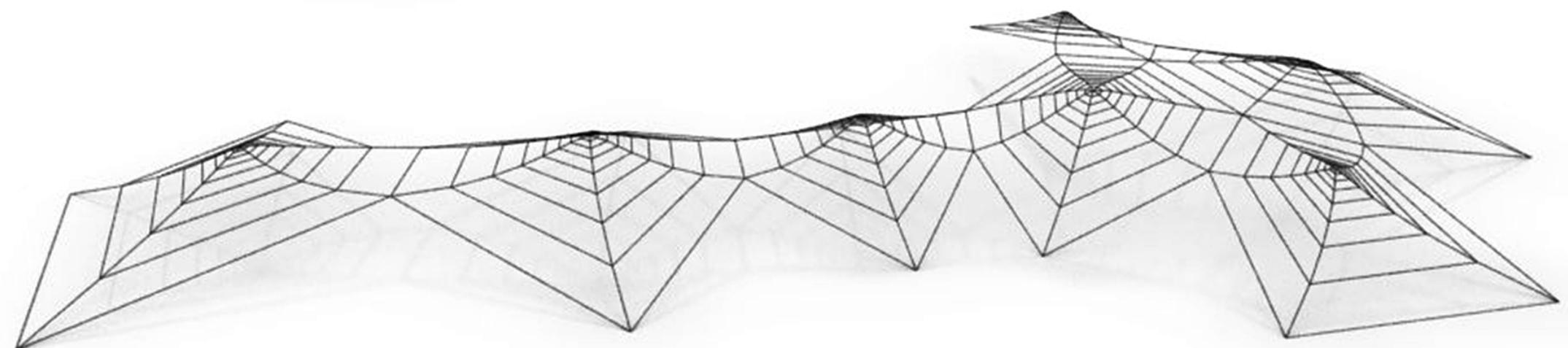
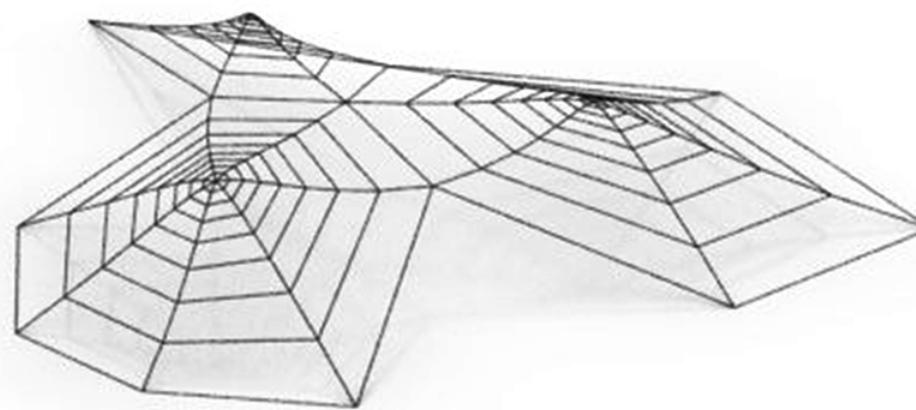
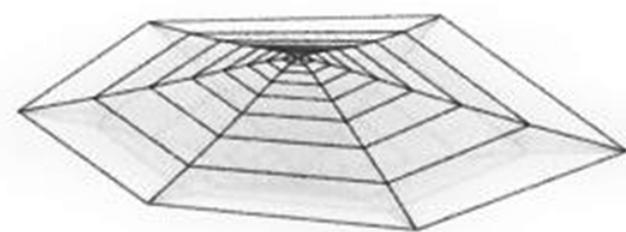
THE MULTIPLE STRUCTURES



5_final configuration

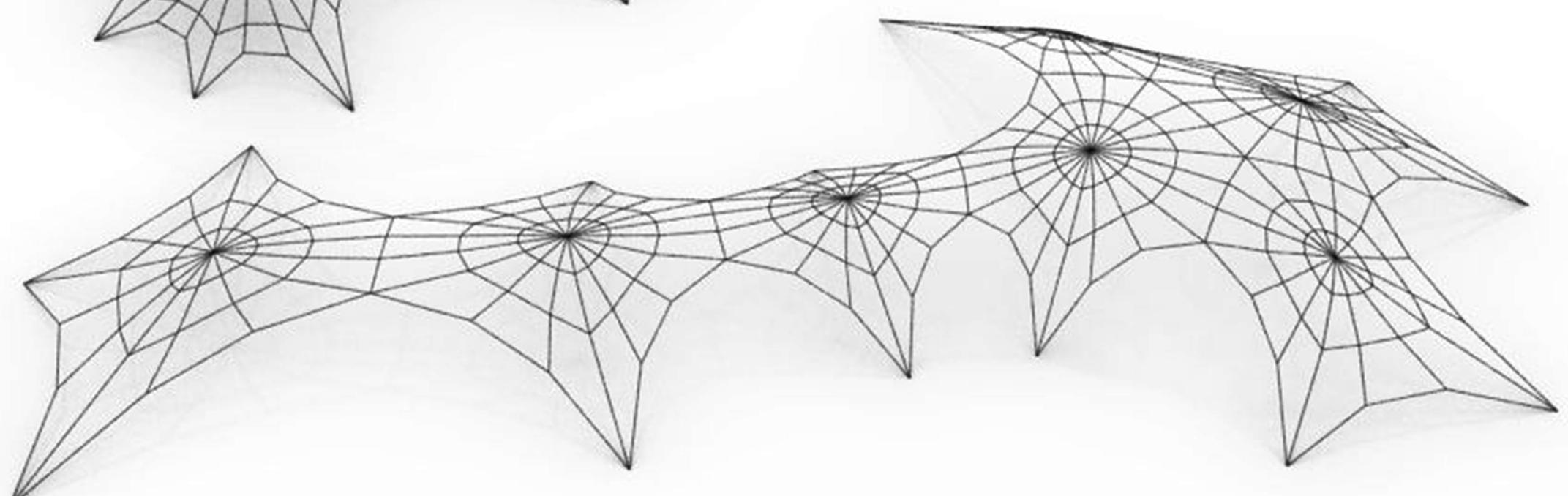
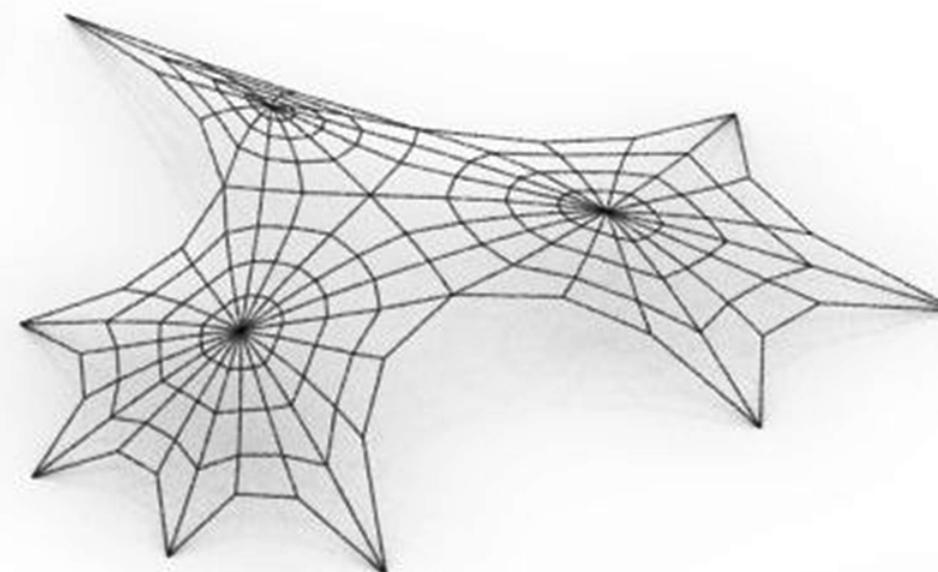
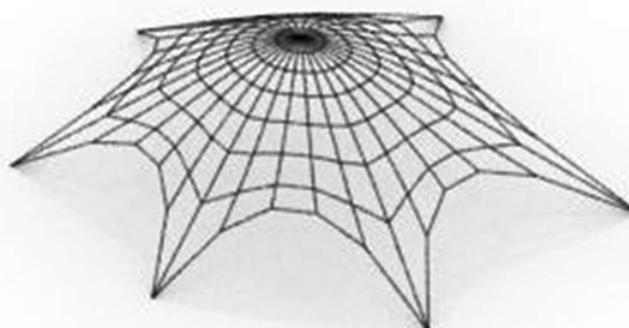
VARIATIONS

VARIATIONS



Varying boundary polylines
Early algorithm

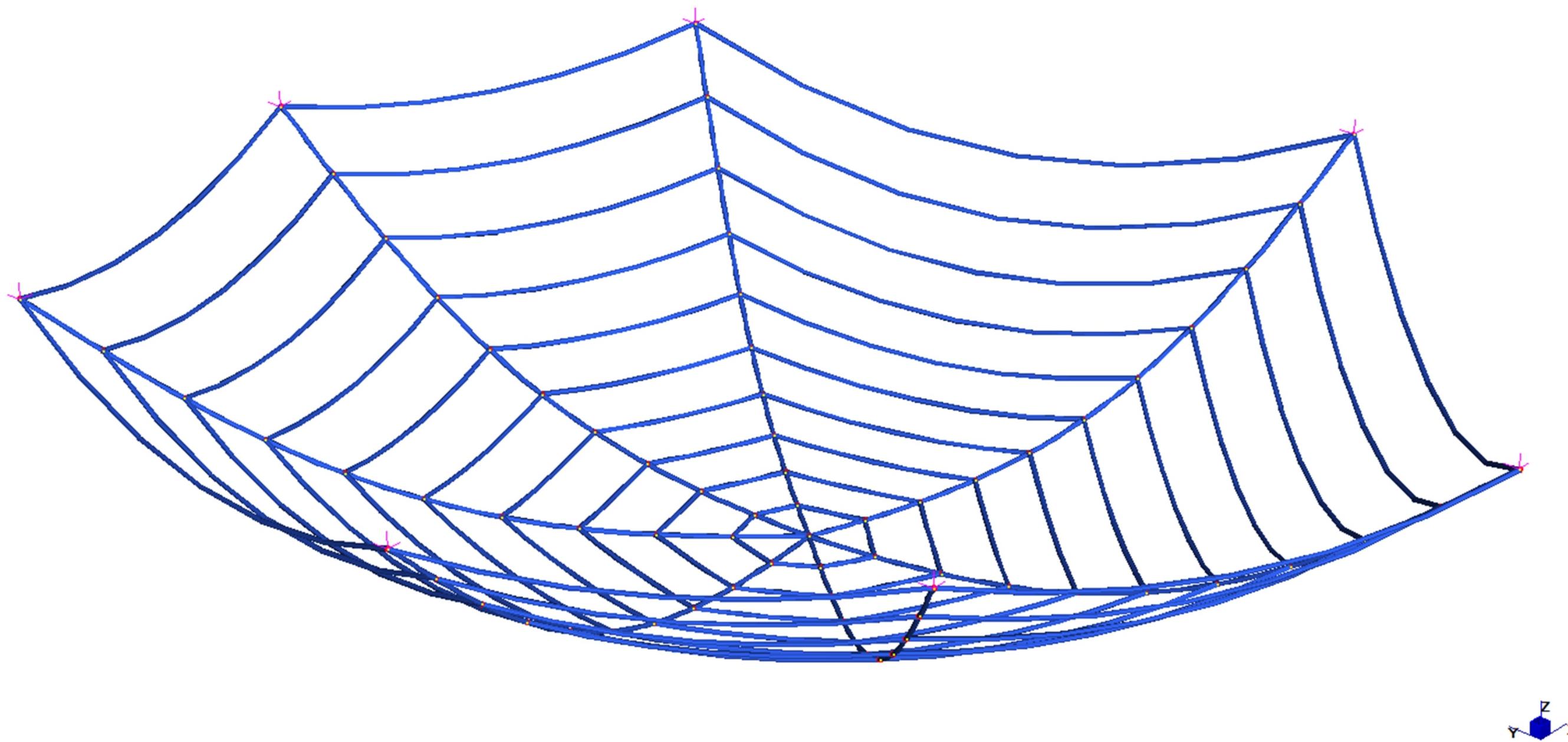
VARIATIONS



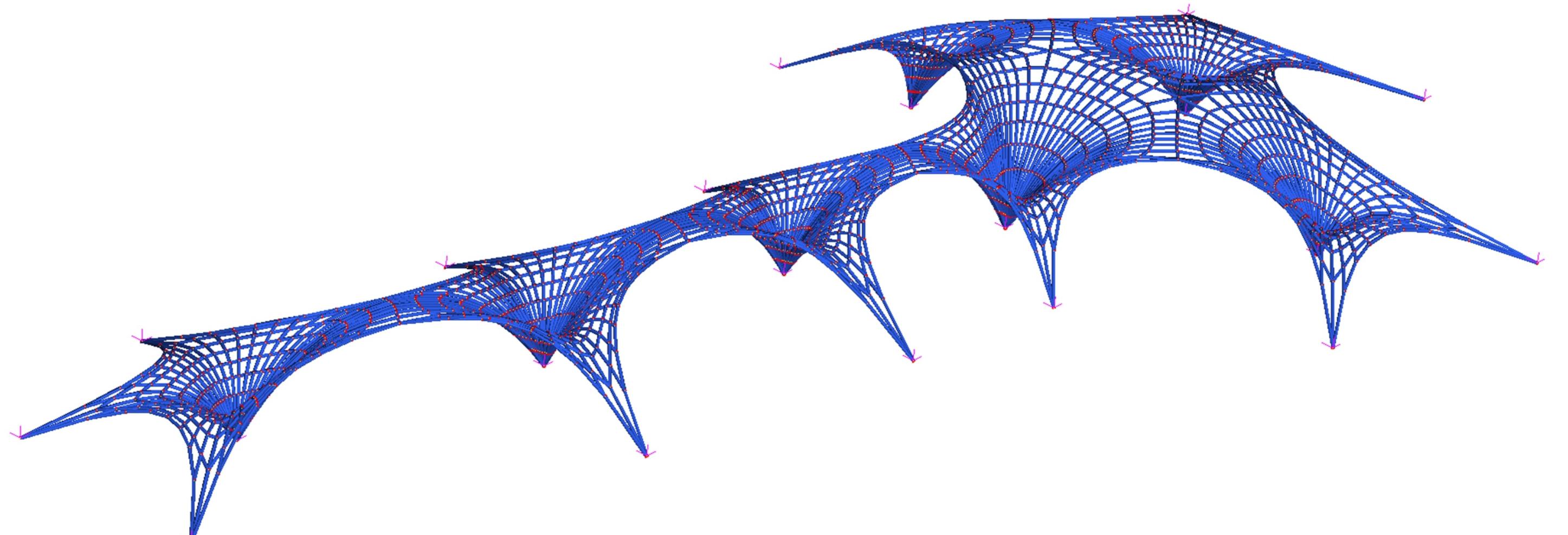
Varying boundary polylines
Advanced alghoritm

ANALYSIS

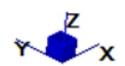
ANALYSIS



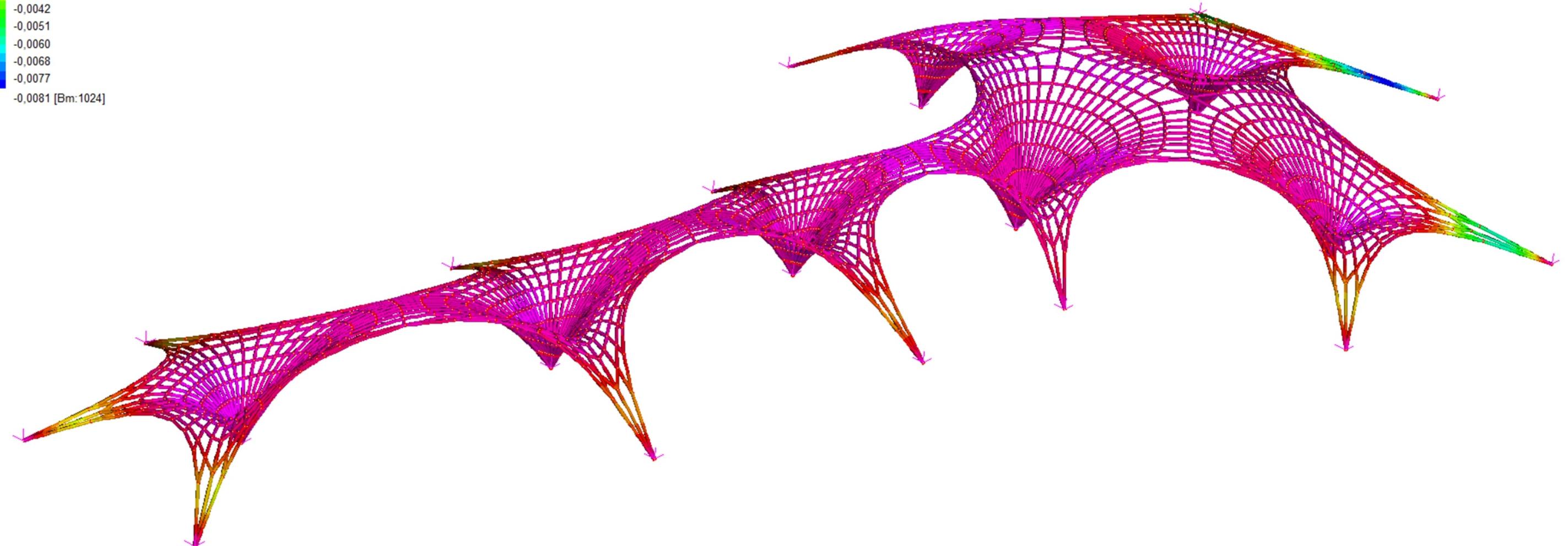
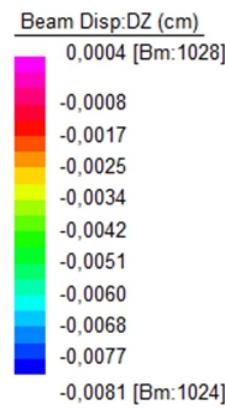
ANALYSIS



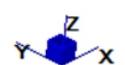
Initial geometry



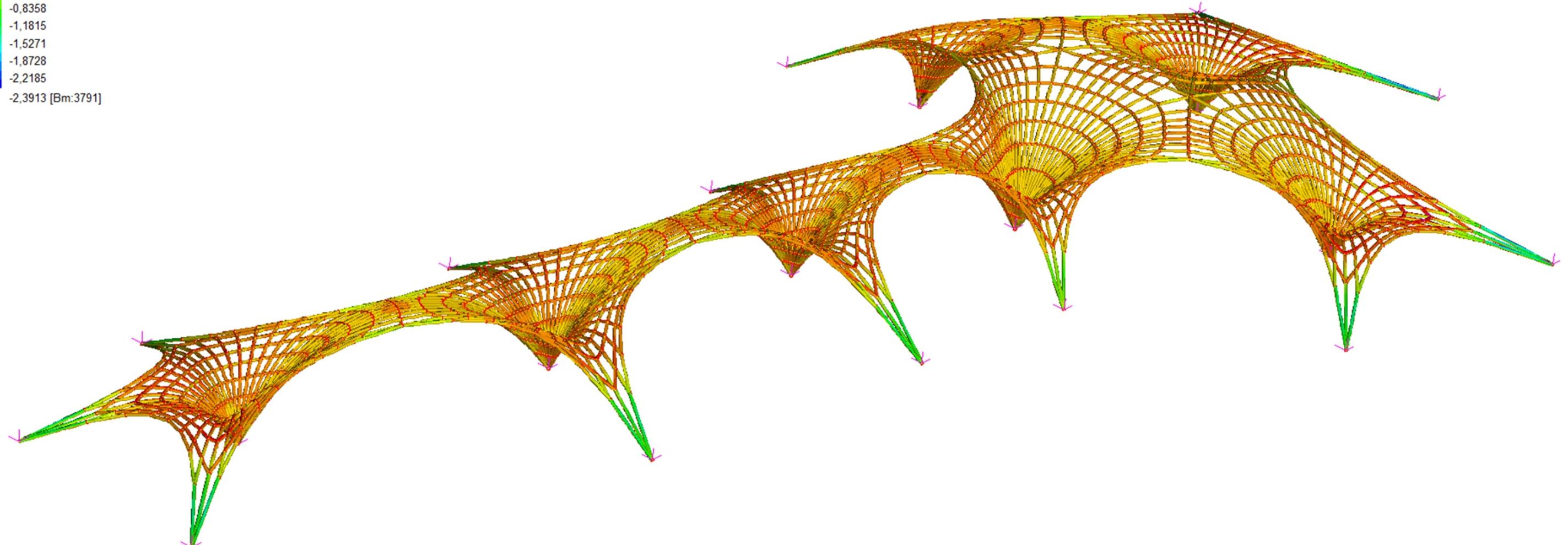
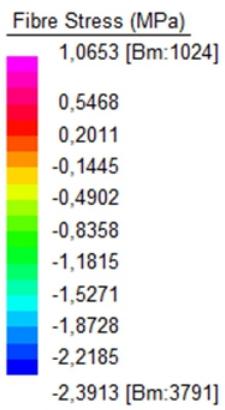
ANALYSIS



Vertical displacement contours



ANALYSIS

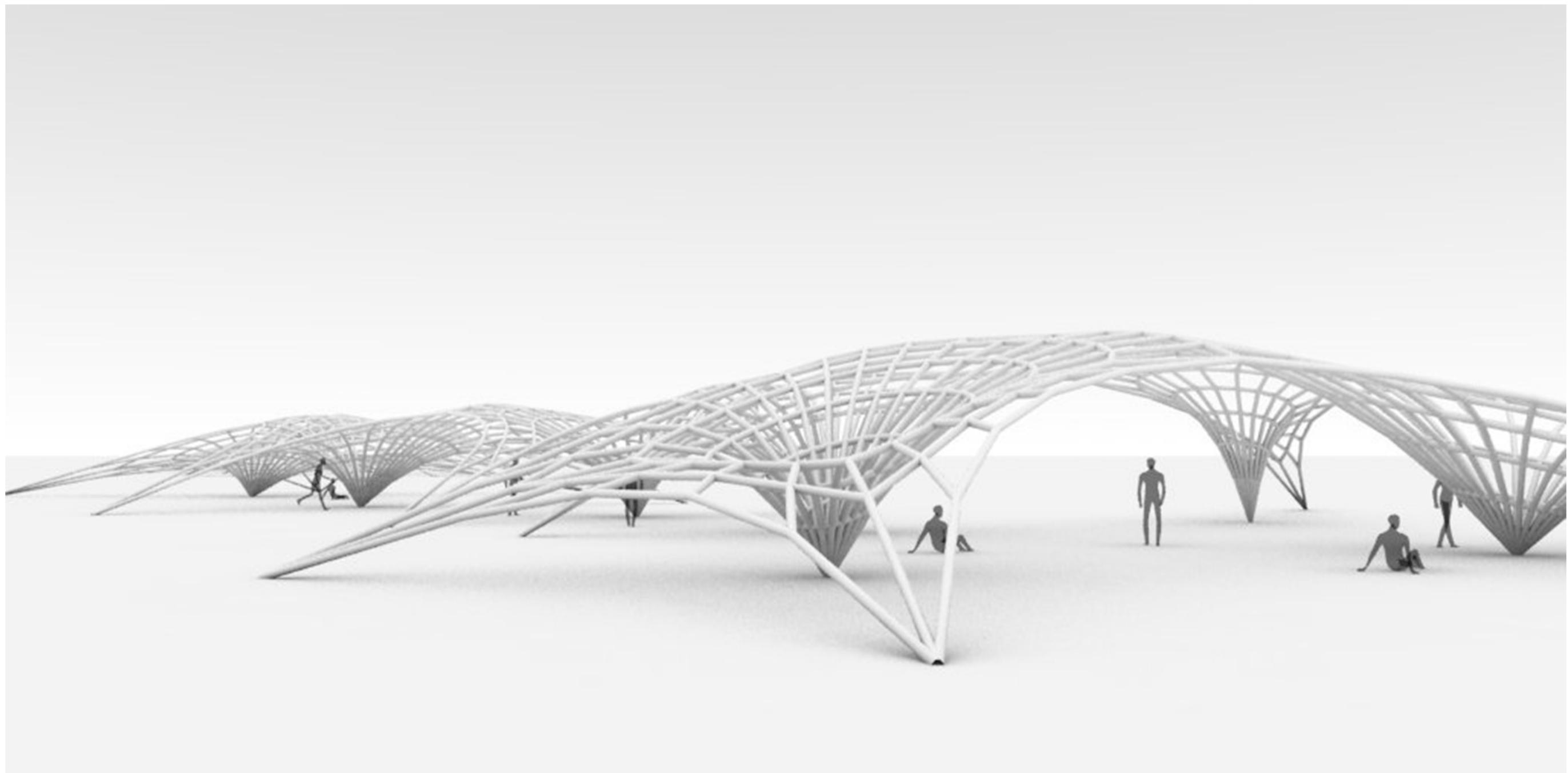


Fibre total stress



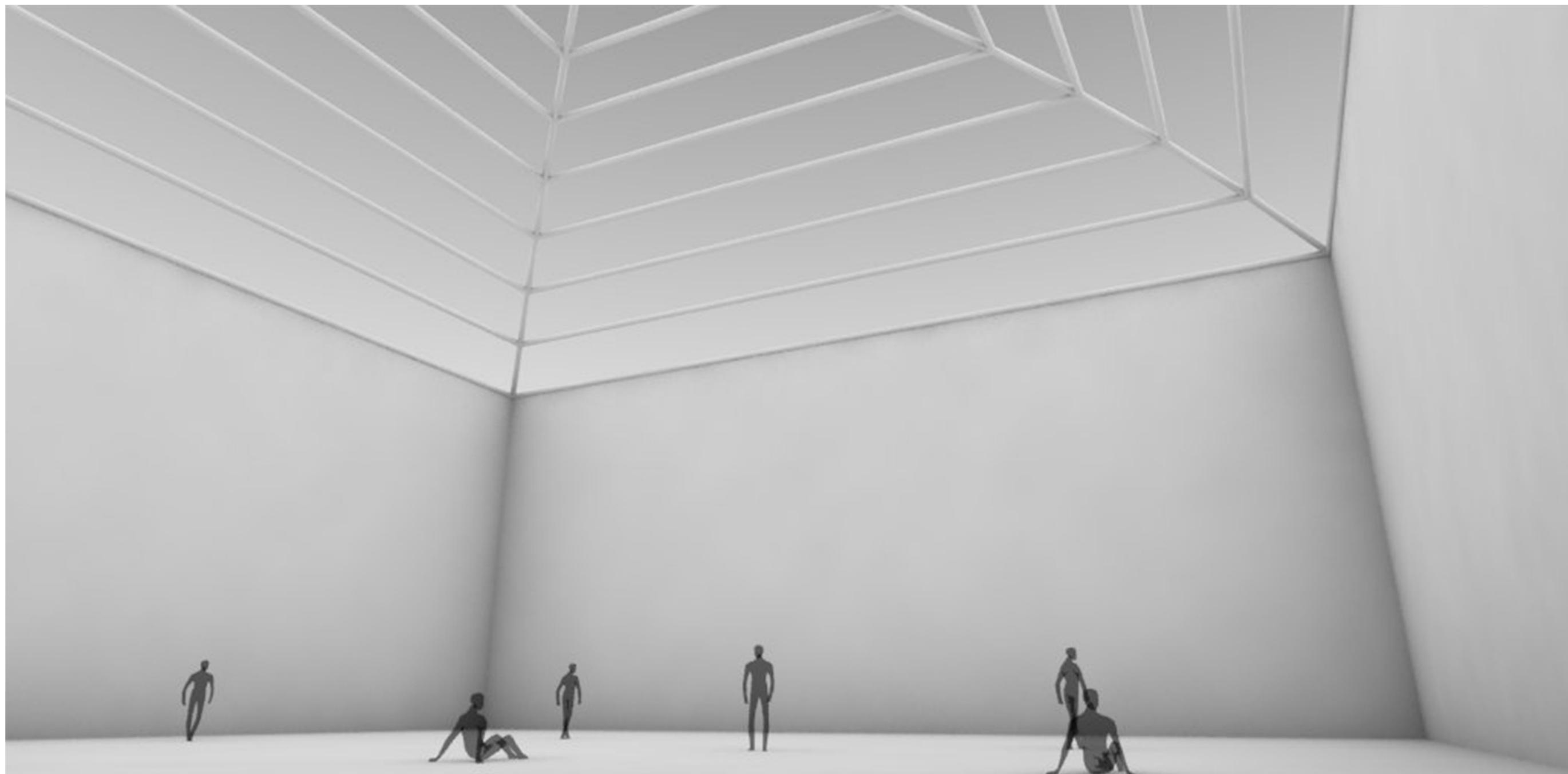
APPLICATIONS

APPLICATIONS



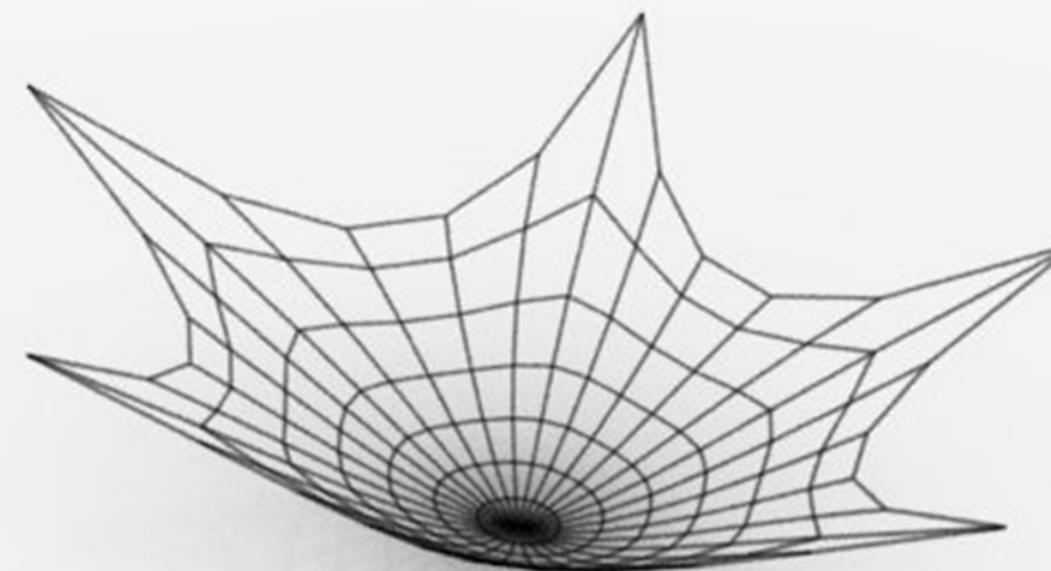
Pavillion

APPLICATIONS



Roof shell

APPLICATIONS



Design application

THE END
