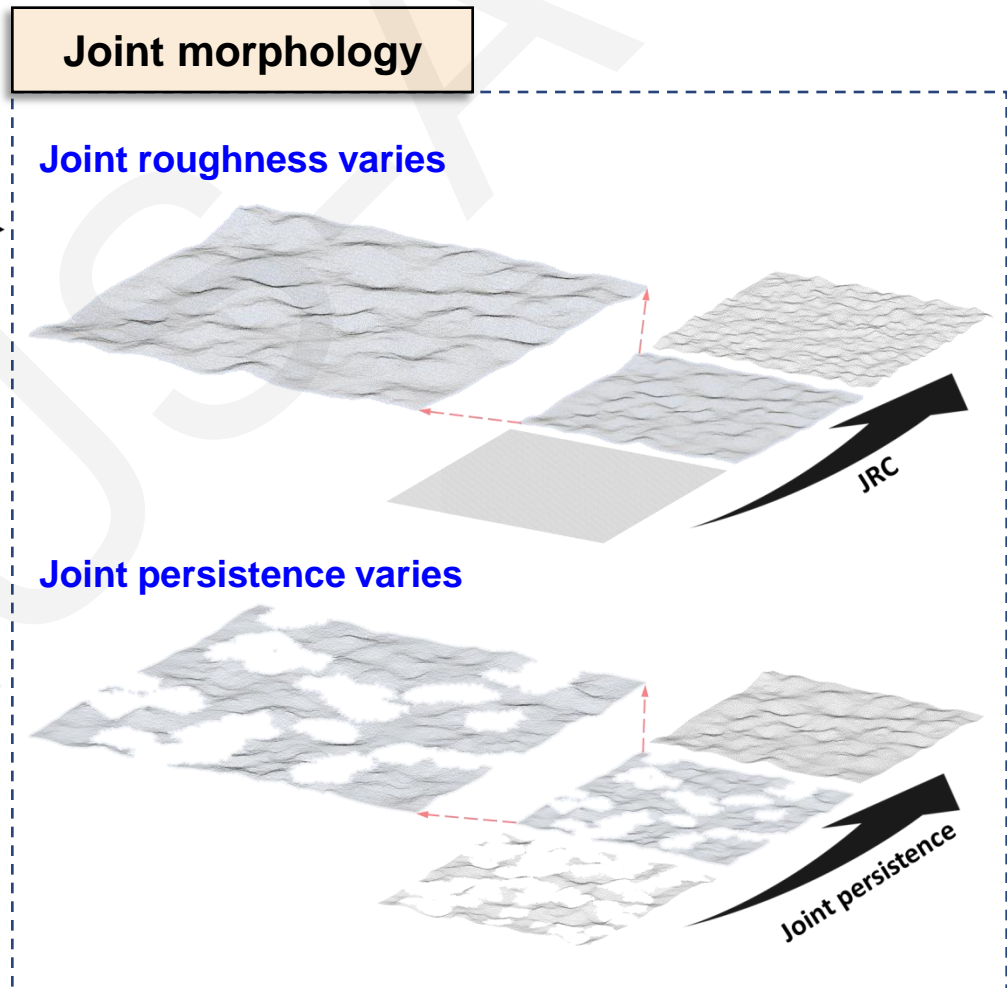
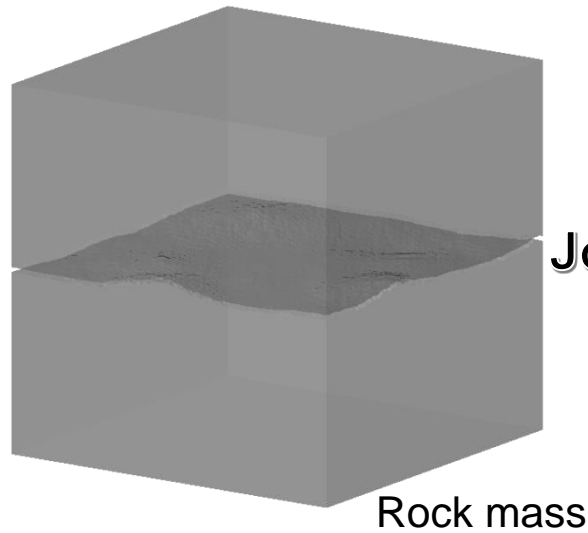


# **Grid-growth method for the reconstruction of 3D rock joints with arbitrary joint roughness and persistence**

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## Reconstruction of Rock Joints

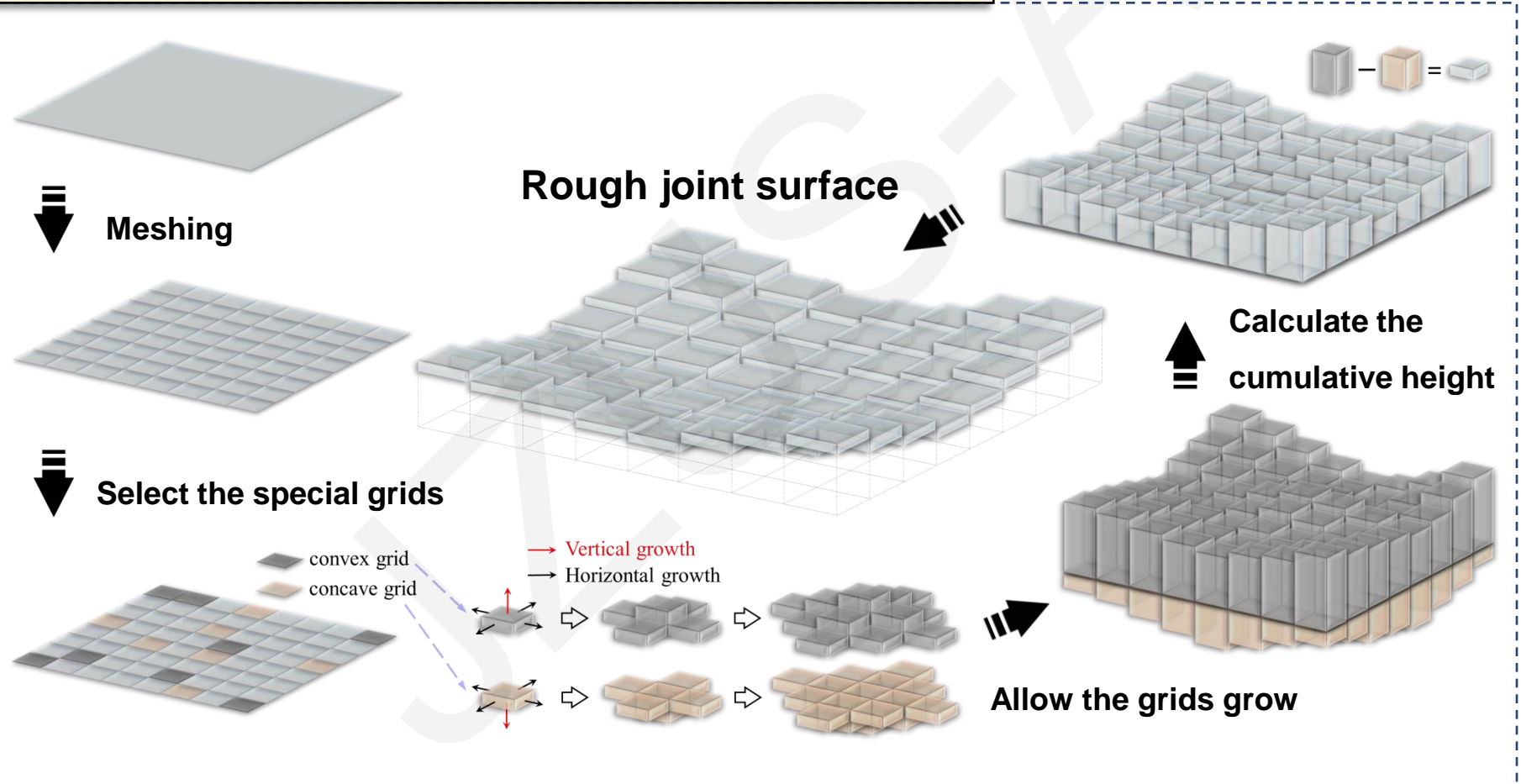


**Key issue**

How to reconstruct rock joints with arbitrary joint roughness and persistence?

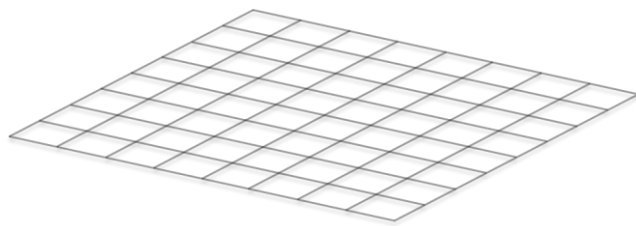
## Reconstruction of Rock Joints

Method for controlling the joint roughness of the model

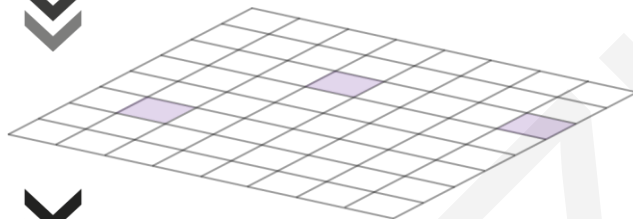


## Reconstruction of Rock Joints

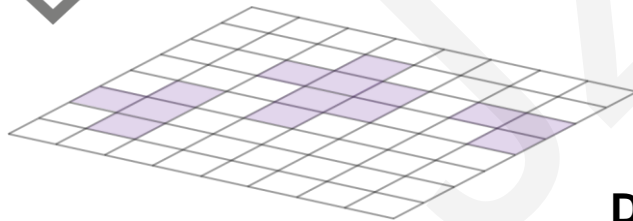
Method for controlling the joint persistence of the model



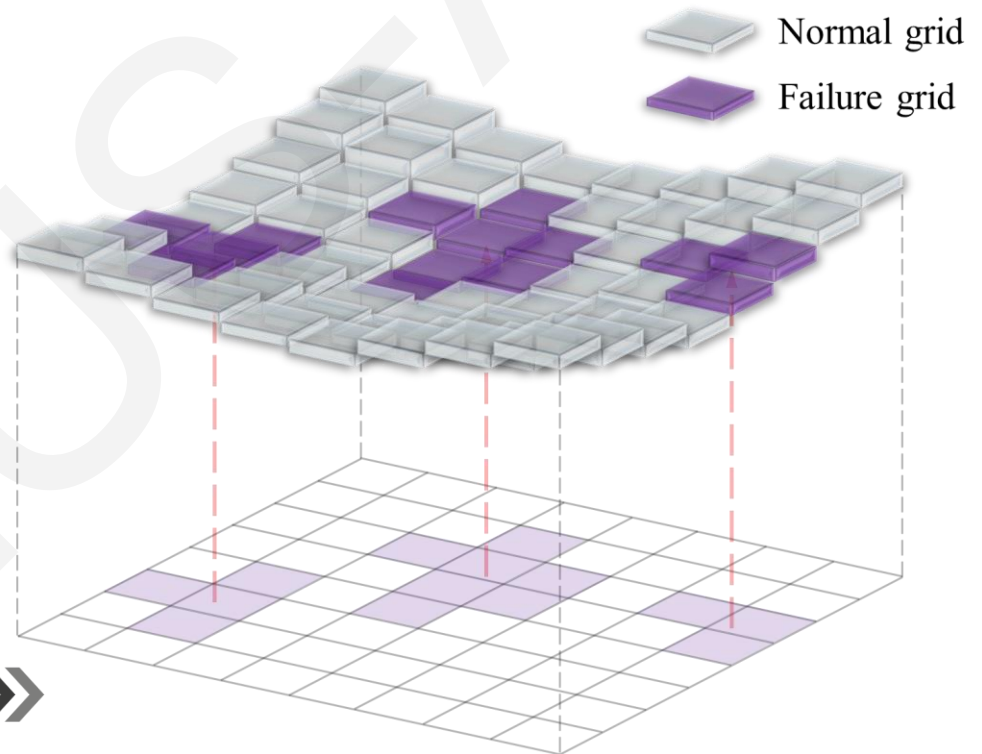
Select the special grids



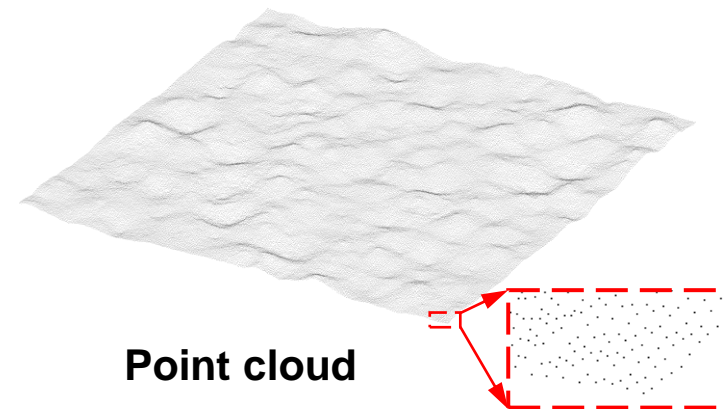
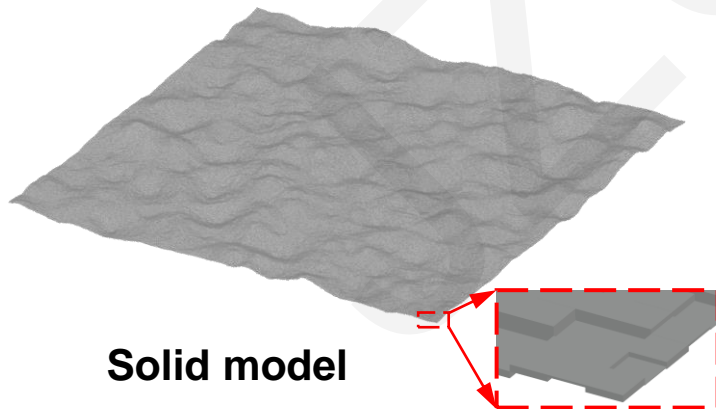
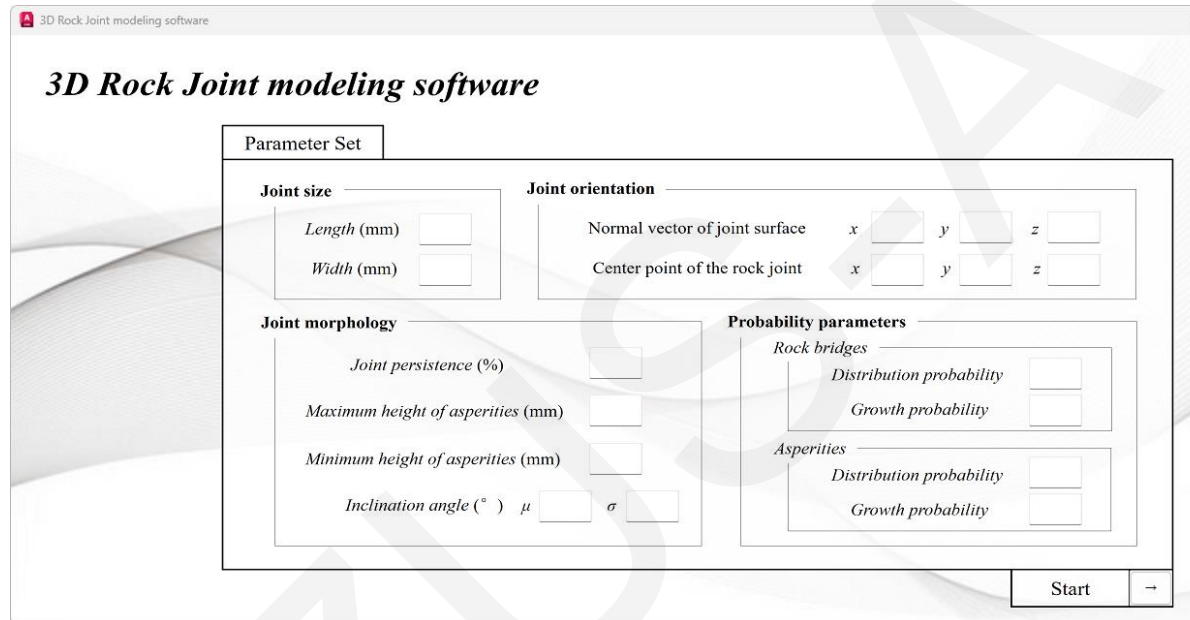
Allow the grids grow



Determine the failure grids



## 3D Rock Joint modeling software



## **Conclusions**

- The JRC of models obtained by the proposed method agrees with that of the artificially split surface. The method demonstrated high accuracy for 3D rock joint reconstruction.
- Grid-growth method can effectively control the JRC of joint models by adjusting the number, height, and slope of asperities.
- Grid-growth method can effectively control the joint persistence of joint models by adjusting the number and area of rock bridges.