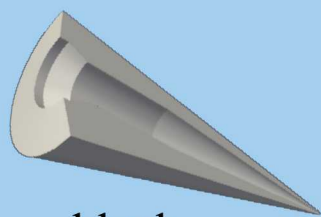# Navigating Semi-Structured Multigrid on Advanced Architectures
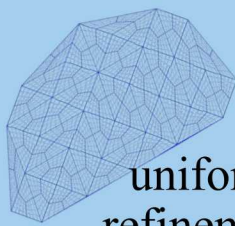
SAND2019-0743C

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M. Mayr, *Bundeswehr University*

❖ **structured meshes provide significant NGP benefits**

  ➢ HPC: less communication, lower bandwidth, efficient kernels, …

  ➢ MG: cheaper setup, less dense operators, convergence gains

  … but … what about those complex geometries ?

❖ **p*artially* structured grids can be tricky to adopt for mature applications**

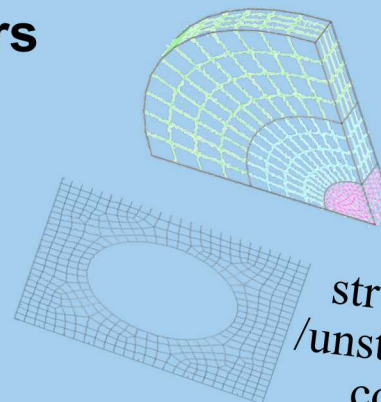❖ **come see our mathematical approach toward non-invasive partially structured grids & fast multigrid solvers**
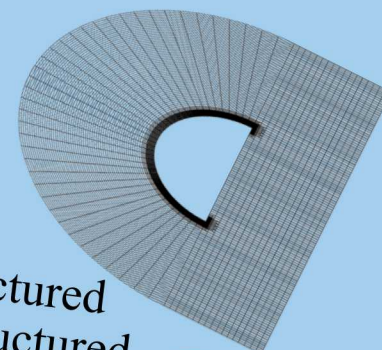

block structured

uniform refinement (HHG)

vertical extrusion

structured /unstructured combo

Our inspiration comes from finite element & sub-structures