Initial Results of Error-Based Mesh Adaptation in M3D-C1

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- field used for SPR error estimation:
  - $\nabla(\psi_{,R}, \psi_{,Z})$
- Mesh adaptation after every 10 timesteps
- Case was run for 600 timesteps
- mesh/field(J_φ) are shown at time steps 100, 200, 300, 400, 500
- Results:
  - (a): adapted mesh
  - (b): J_φ solution on adapted mesh
  - (c): J_φ solution on initial mesh
- Initial mesh:
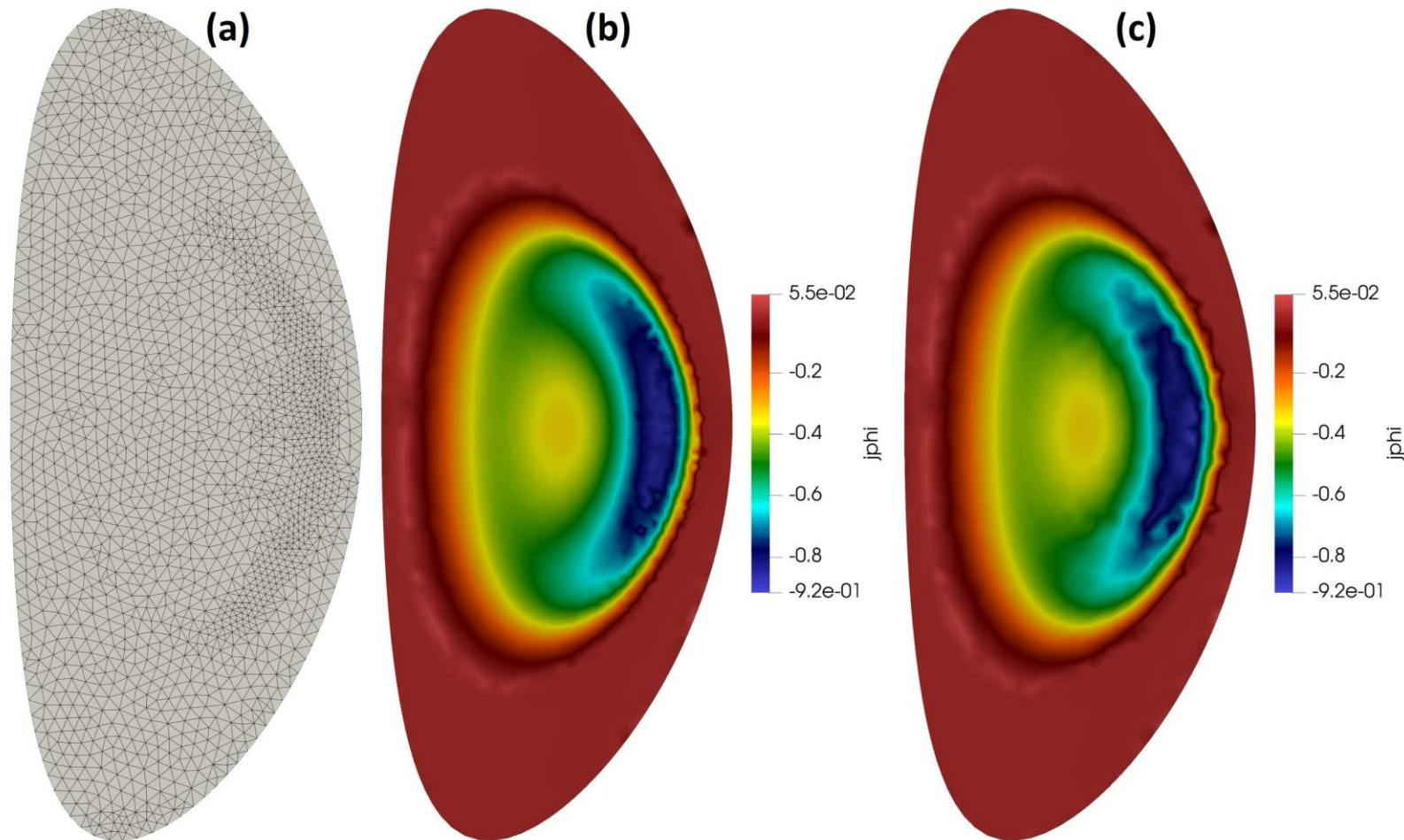 - Mesh vertices: 1323
  - Mesh edges: 3841
  - Mesh faces: 2519
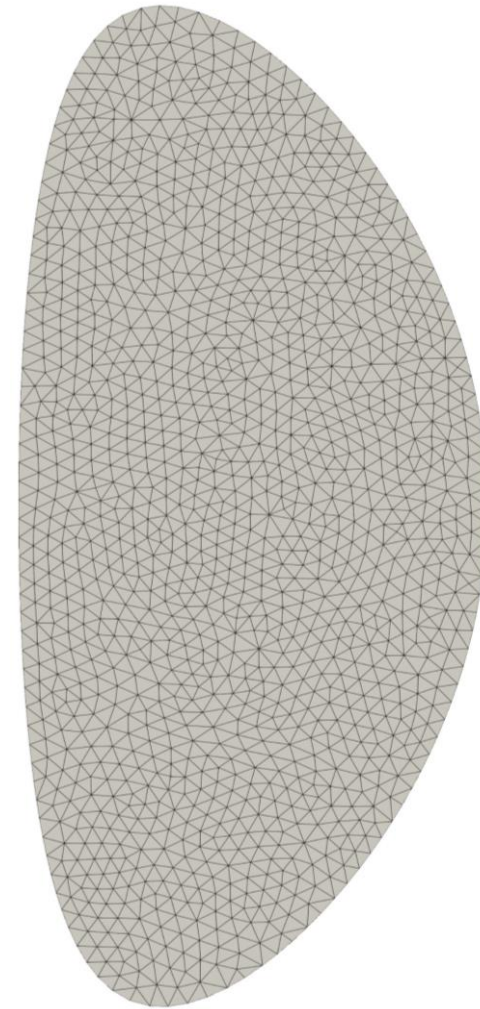
Initial mesh

Timestep = 100

	adapted mesh	Initial mesh
mesh vertices	1829	1323
mesh edges	5359	3841
mesh faces	3531	2519

Timestep = 200

	adapted mesh	Initial mesh
mesh vertices	2470	1323
mesh edges	7282	3841
mesh faces	4813	2519

(a)

(b)

(c)
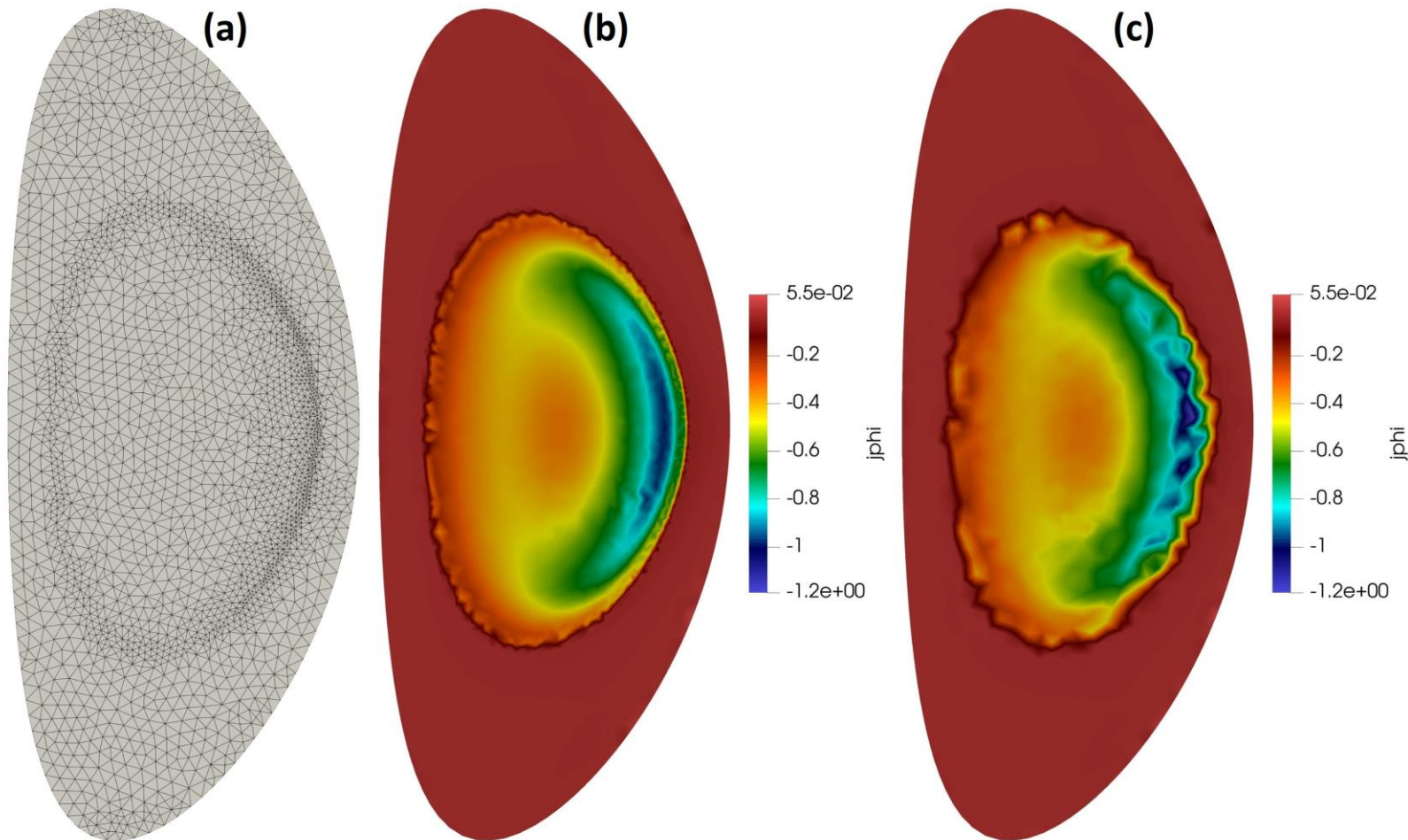
Timestep = 300

	adapted mesh	Initial mesh
mesh vertices	4560	1323
mesh edges	13552	3841
mesh faces	8993	2519

(a)   (b)   (c)
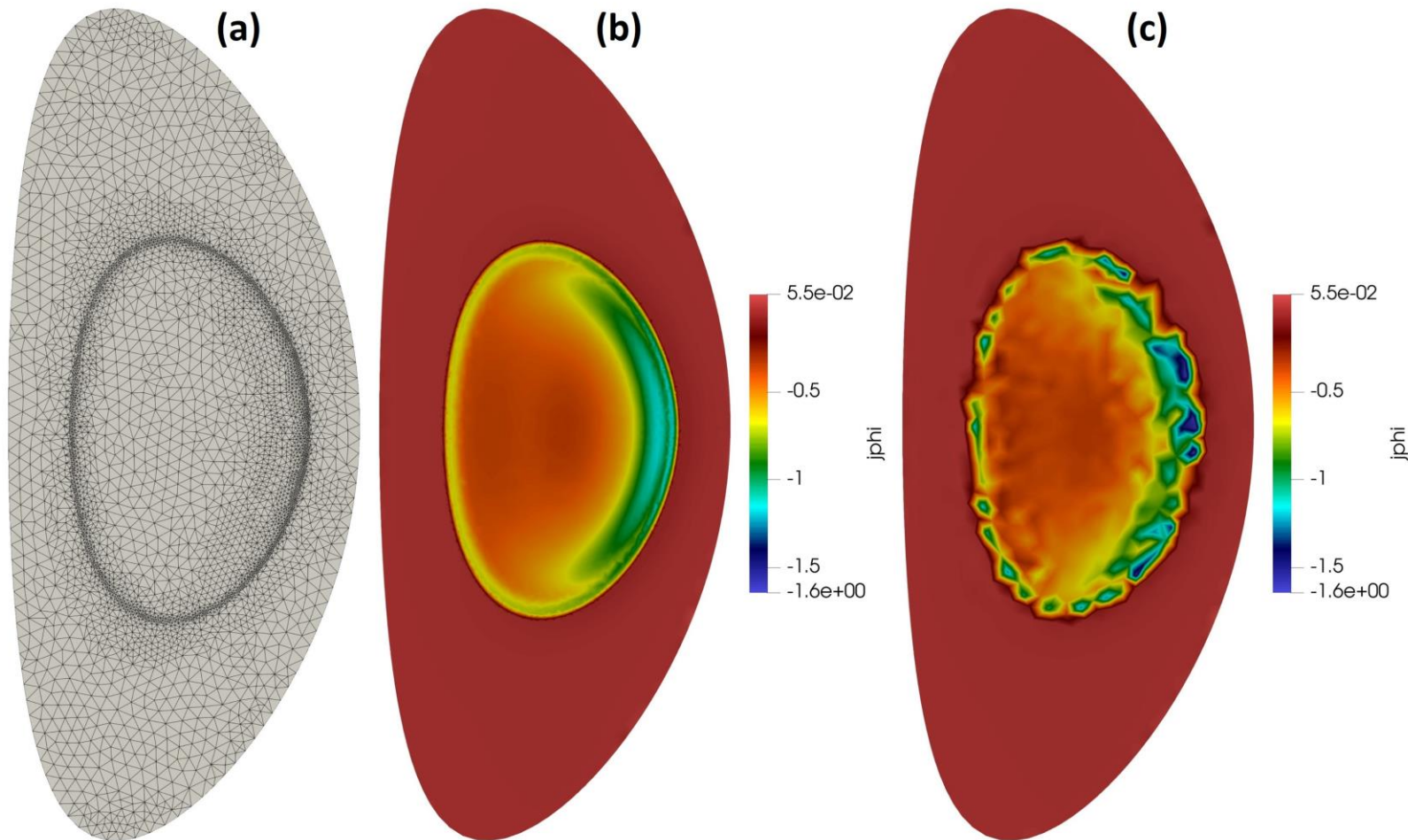
Timestep = 400

	adapted mesh	Initial mesh
mesh vertices	6043	1323
mesh edges	18001	3841
mesh faces	11959	2519

(a)

(b)

(c)
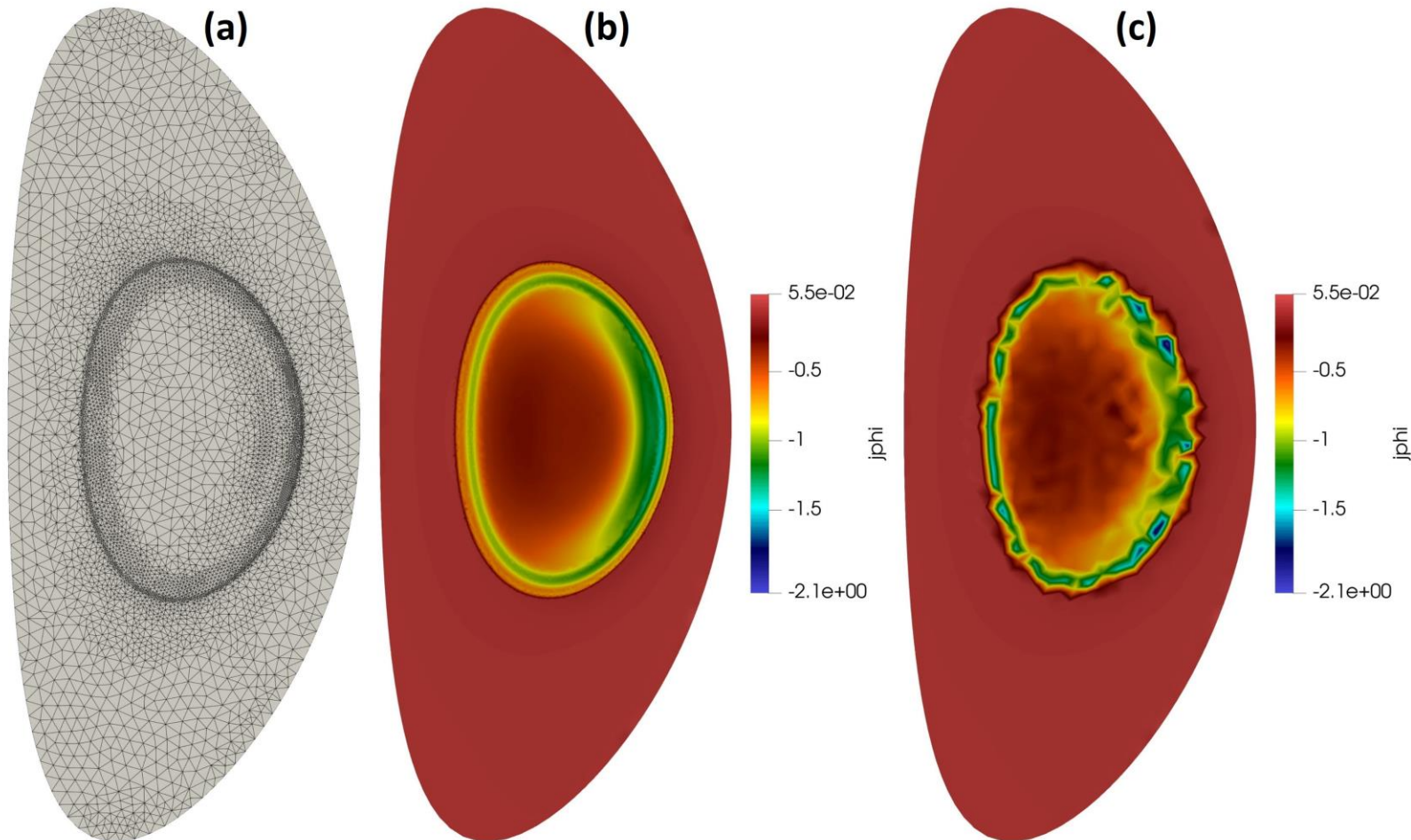
Timestep = 500

	adapted mesh	Initial mesh
mesh vertices	8676	1323
mesh edges	25900	3841
mesh faces	17225	2519

(a)

(b)

(c)
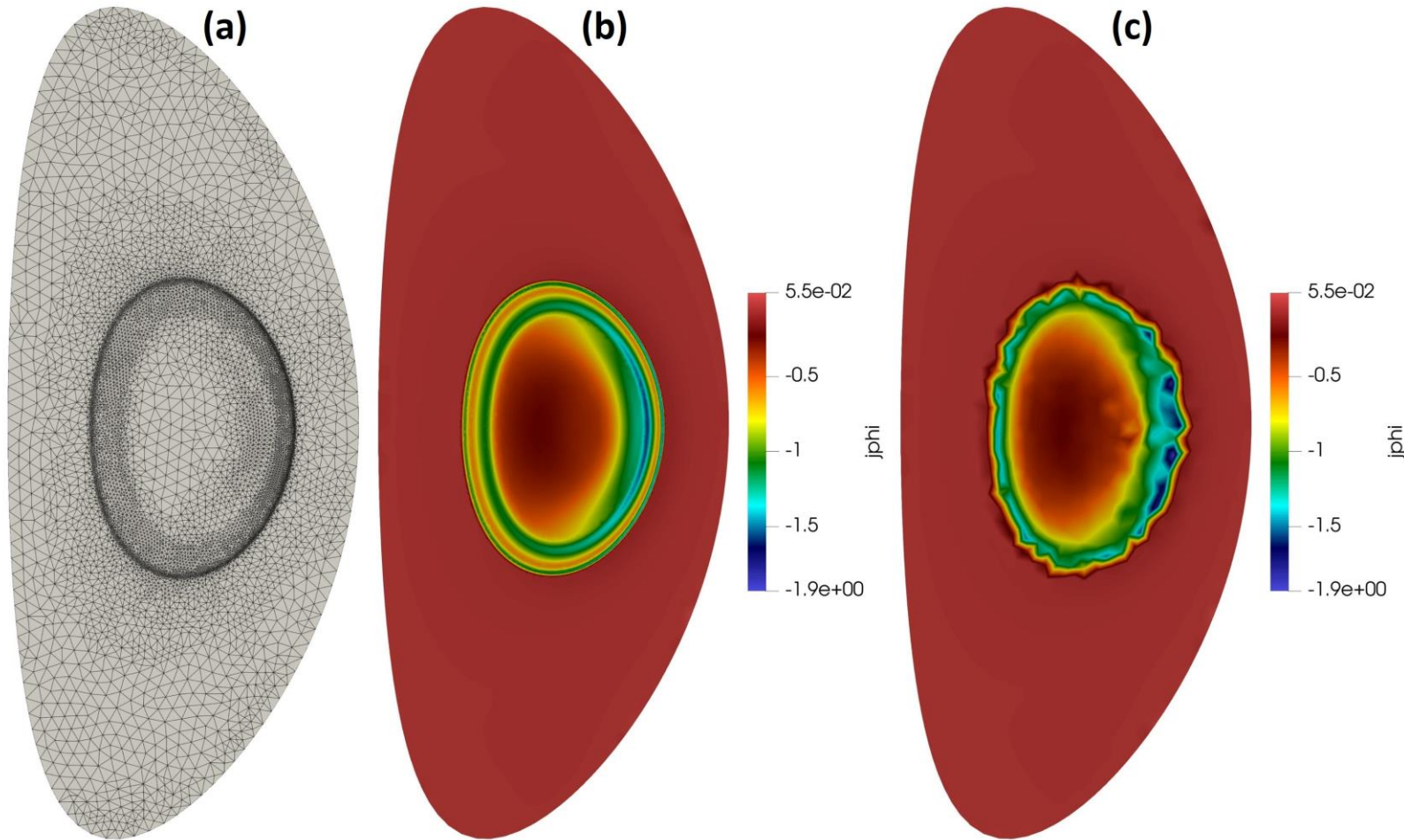
Timestep = 600

	adapted mesh	Initial mesh
mesh vertices	28423	1323
mesh edges	85138	3841
mesh faces	56716	2519

(a)   (b)   (c)