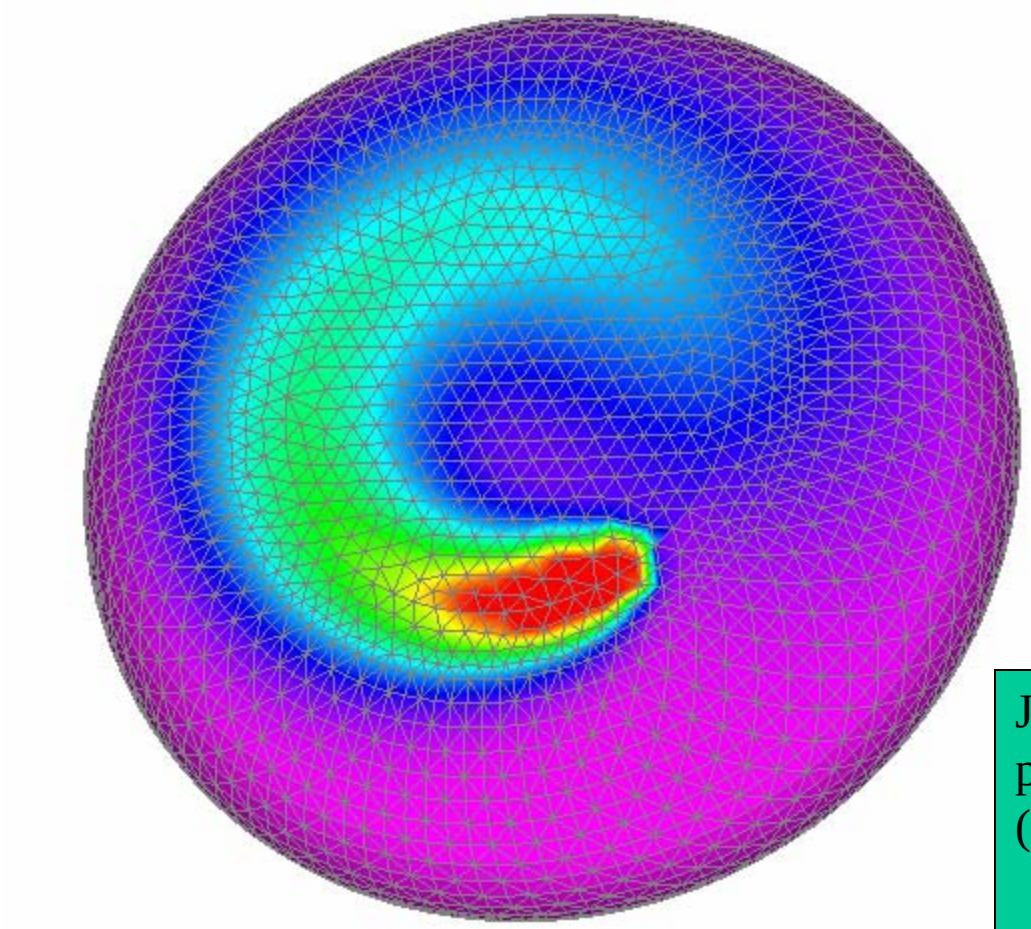
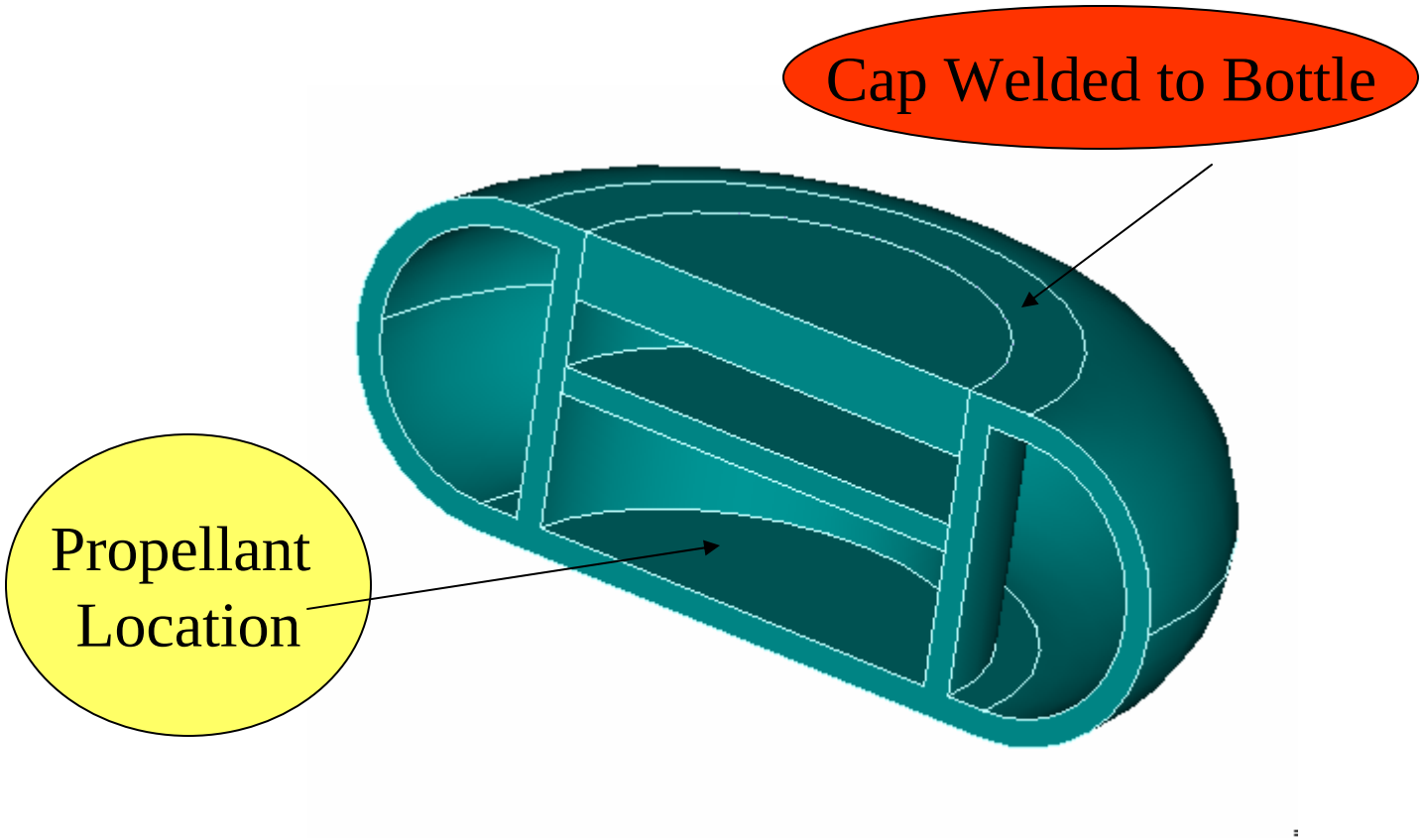
Air Bag Inflator Weld Process Study

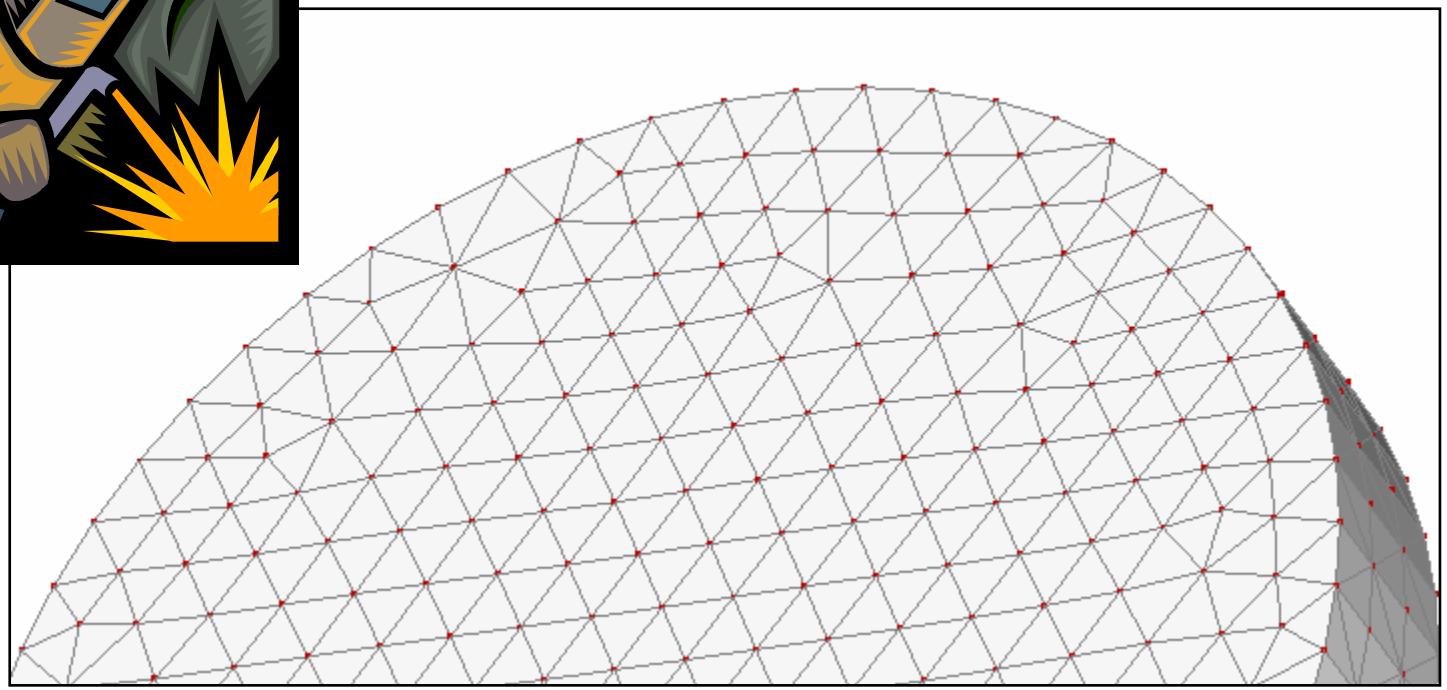


John Pinckney
pinckneyconsulting@yahoo.com
(480) 558-4986

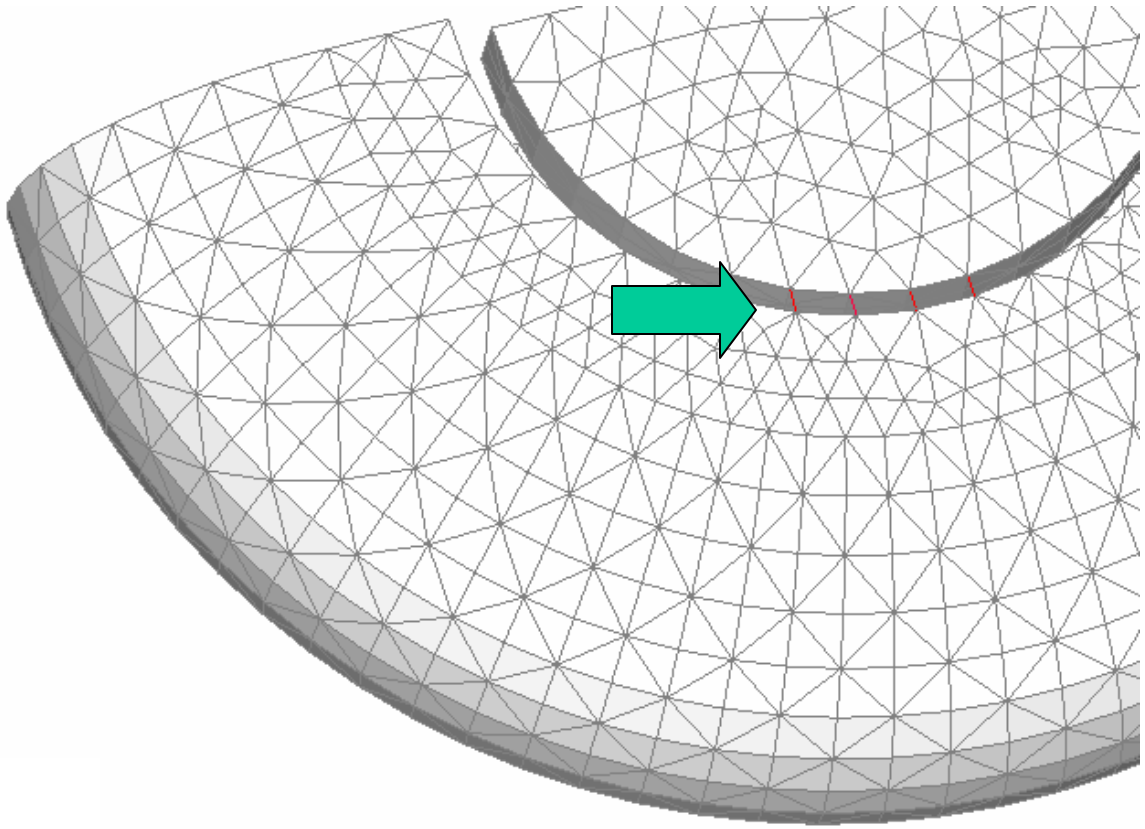
Find Temperatures in Areas that Contain the Propellant During the Welding Process



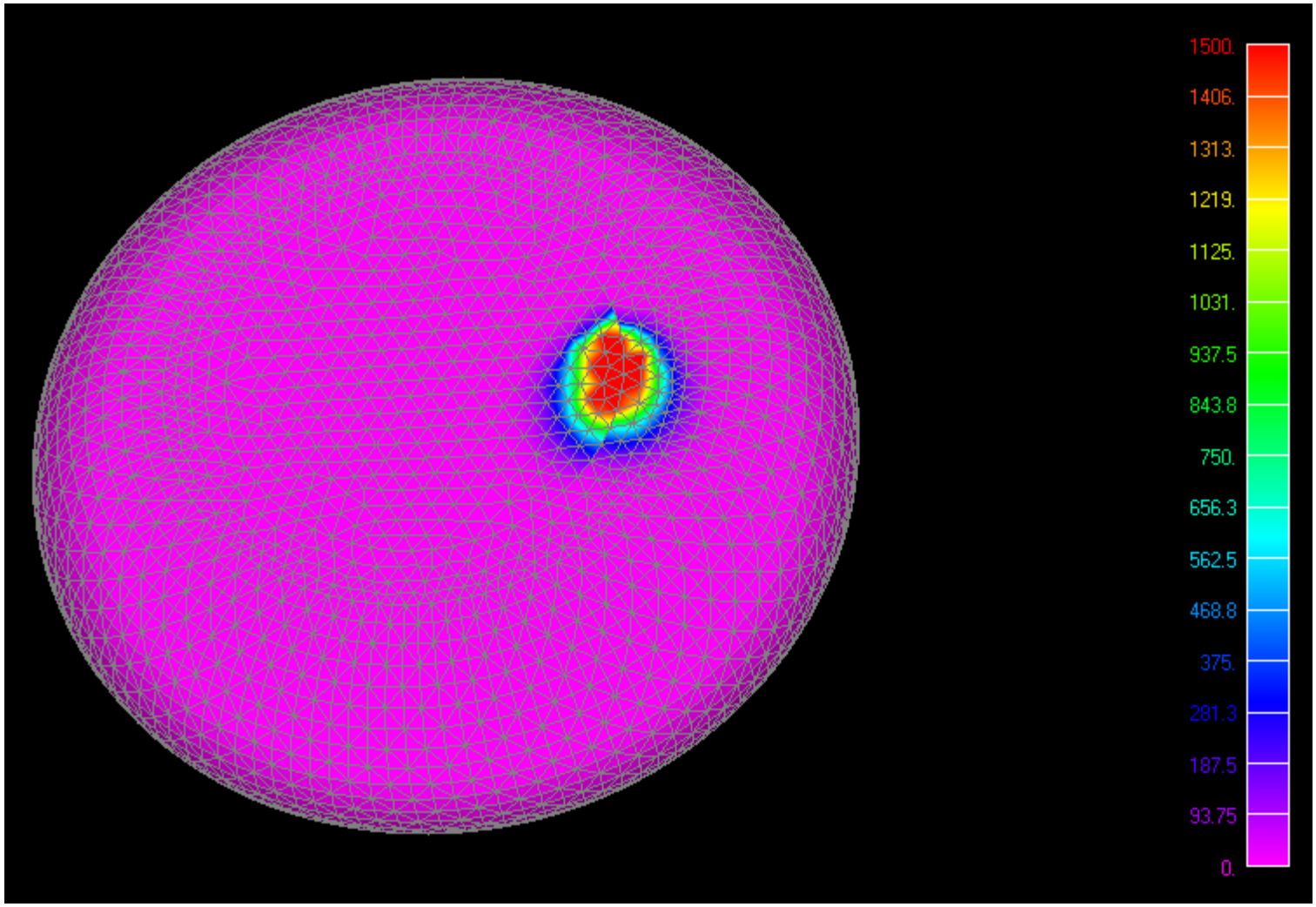
Apply Weld Heat to Nodes on Edge of Cap

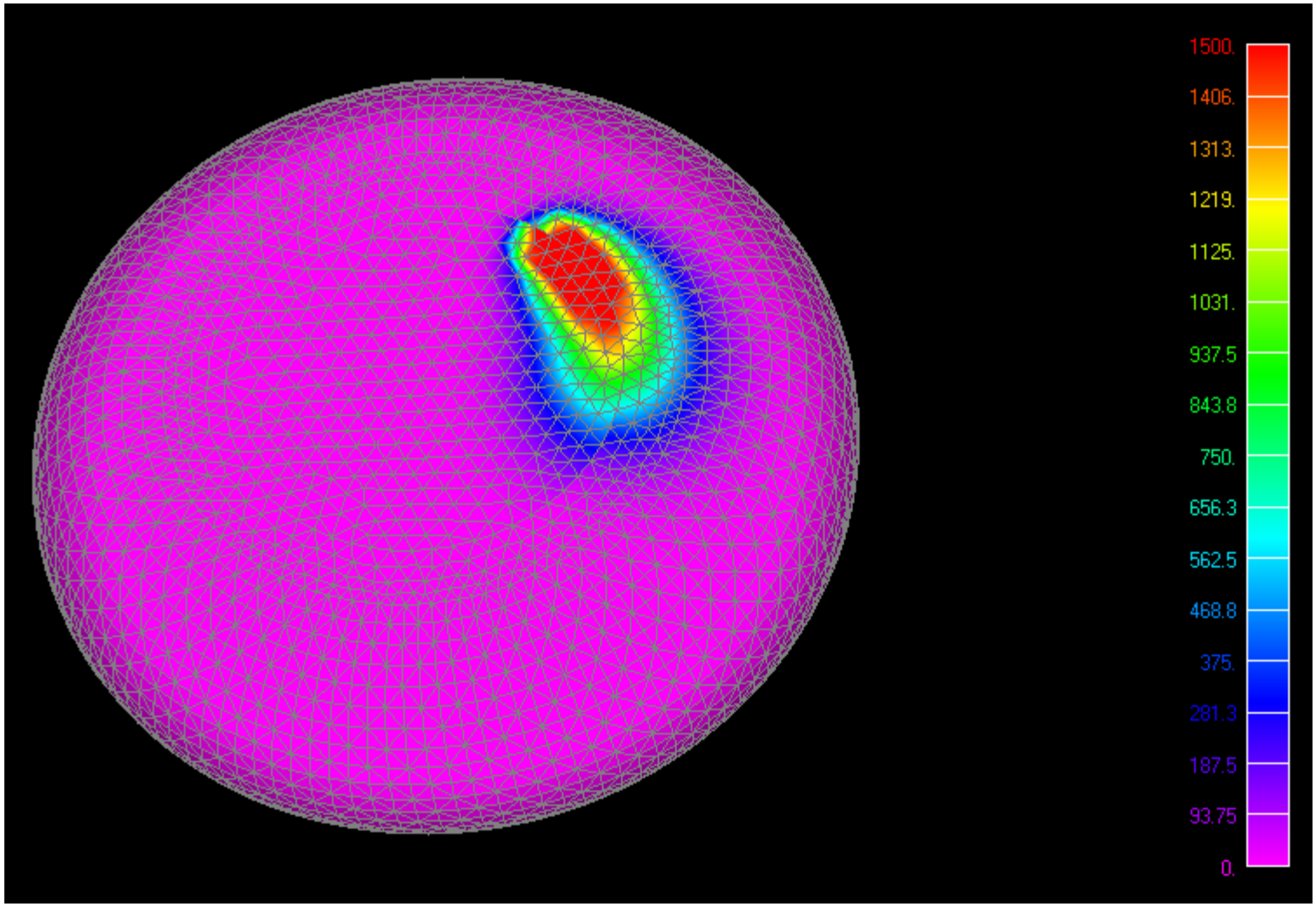


Turn On Conductors Between Cap and Bottle as Weld Progresses



Movie Snapshots

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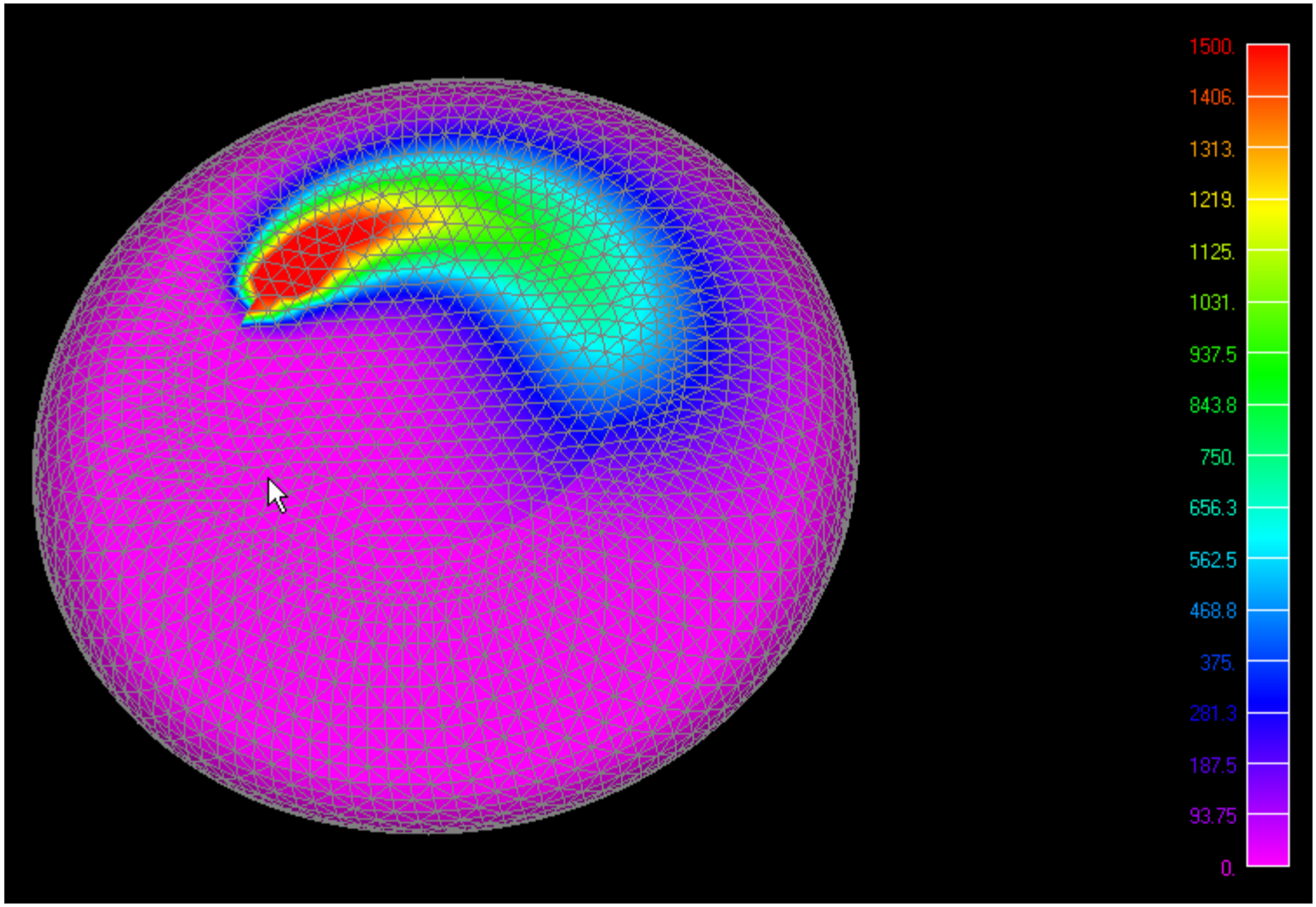
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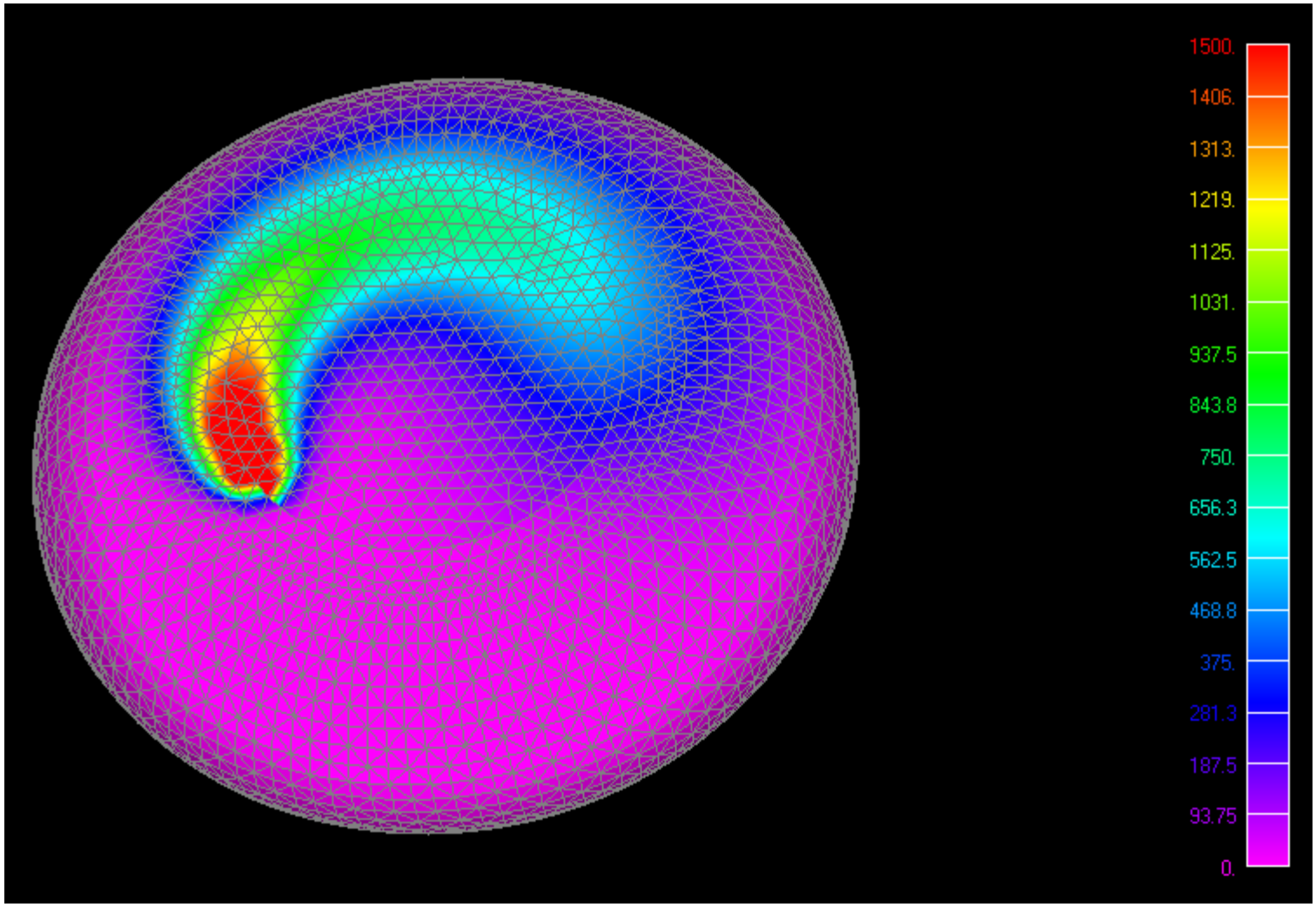
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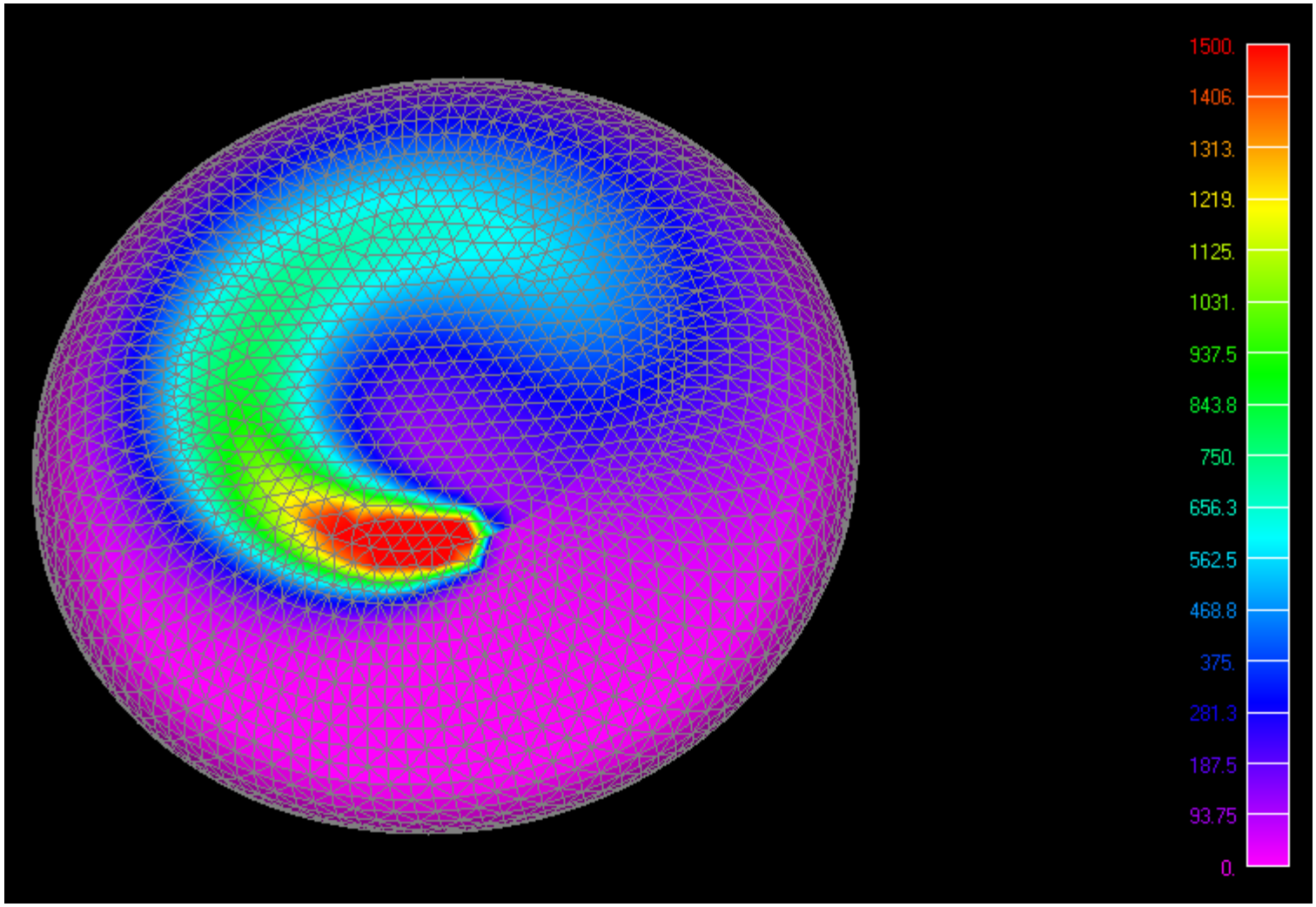
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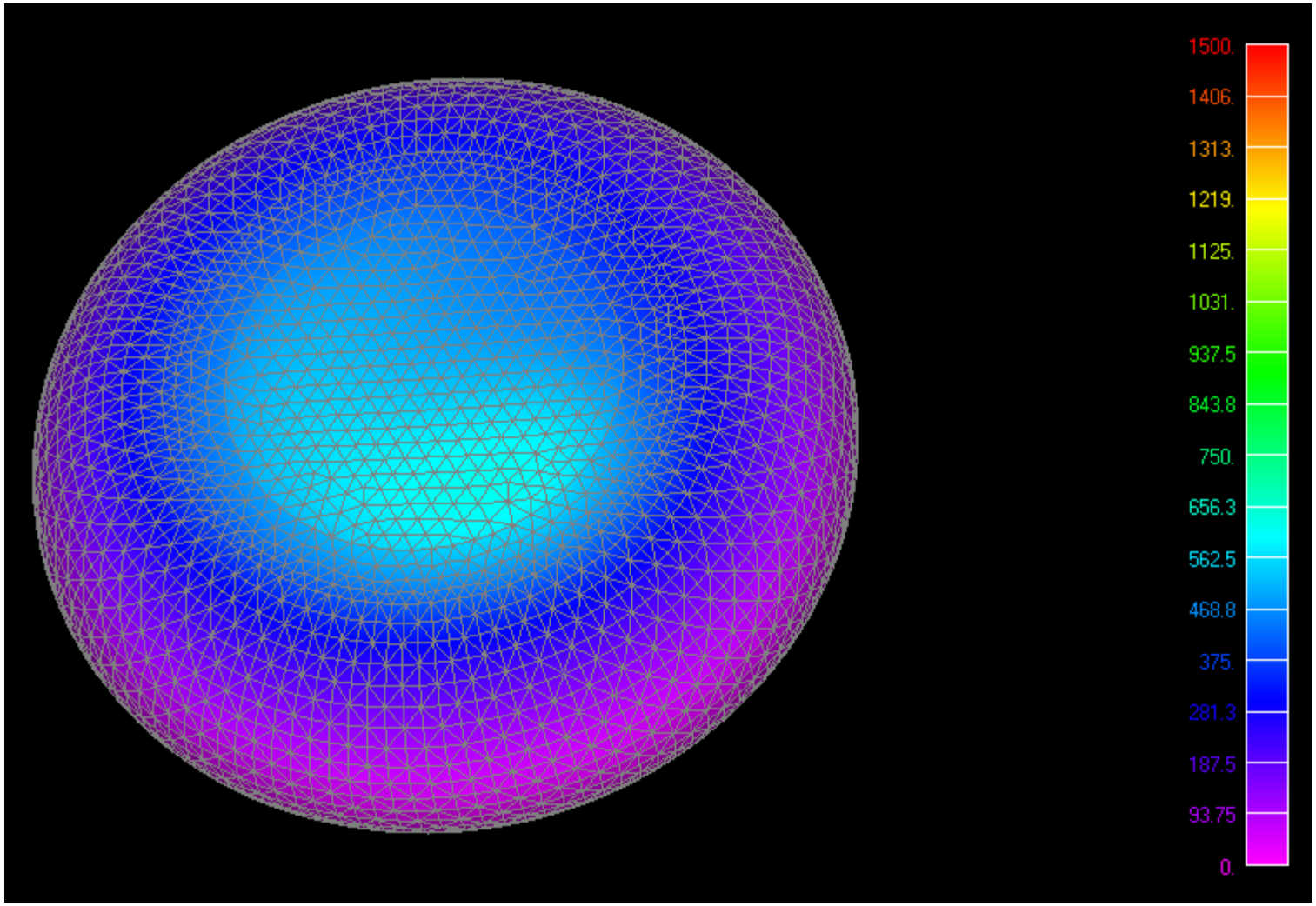
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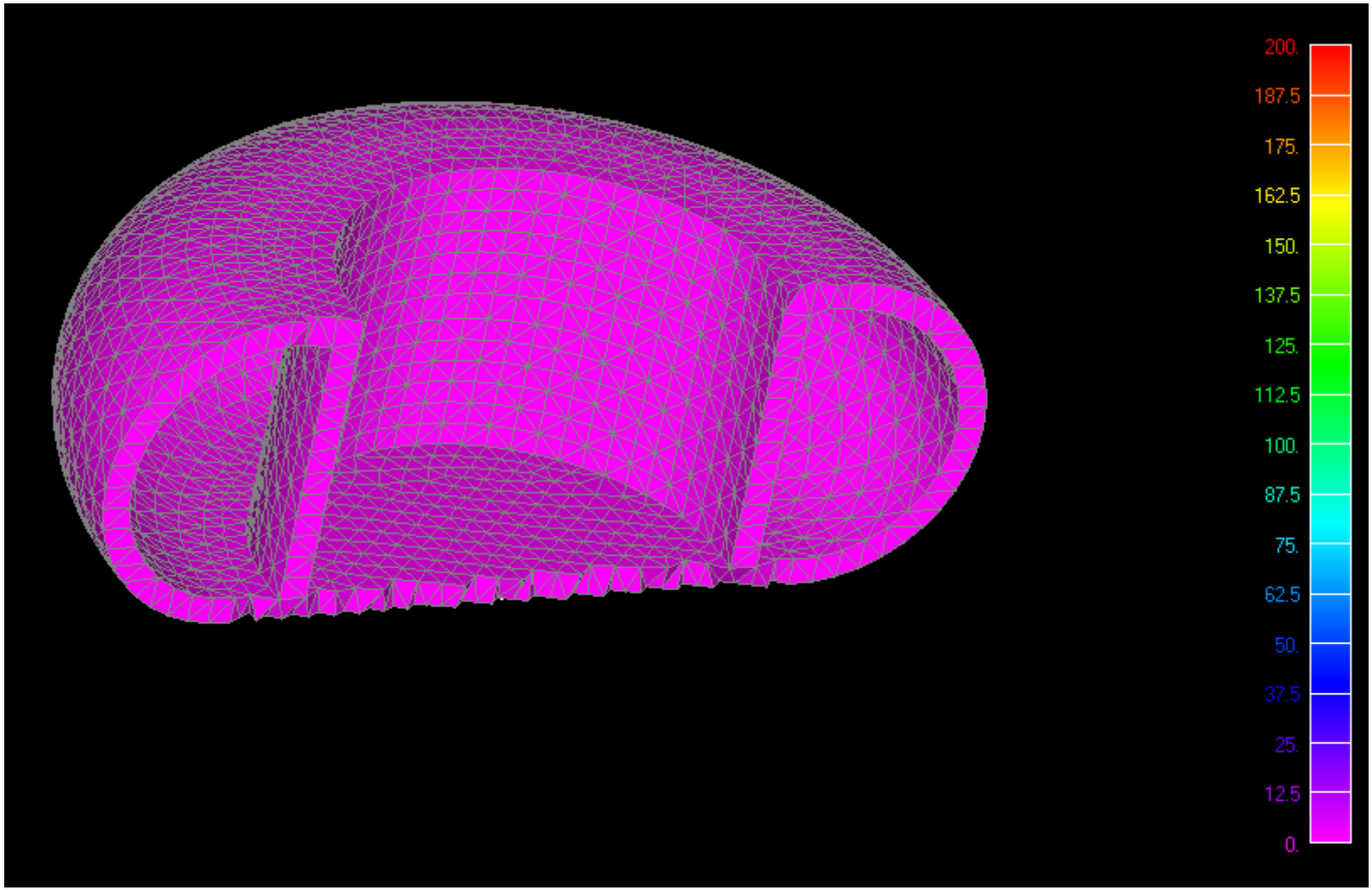
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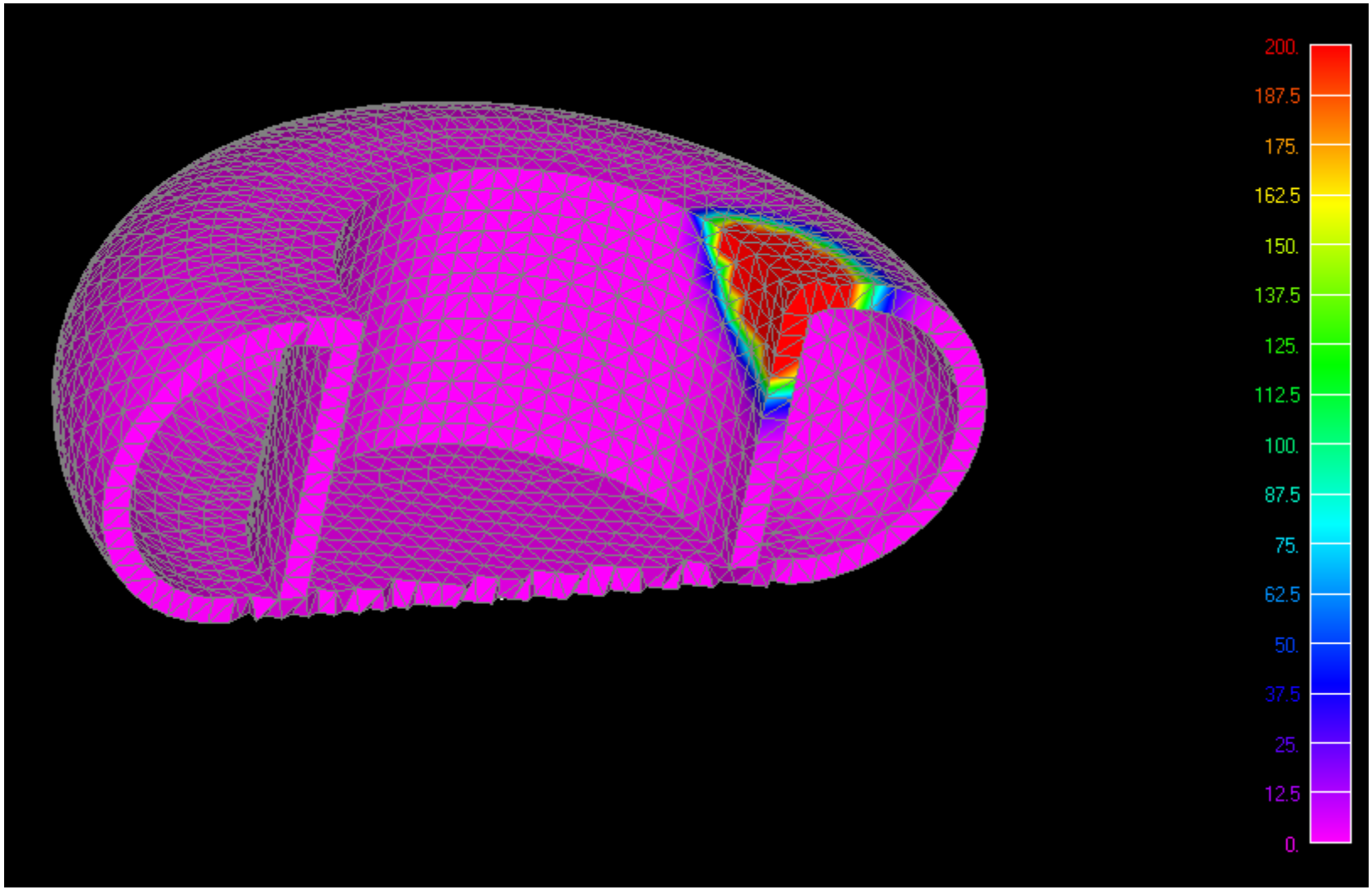
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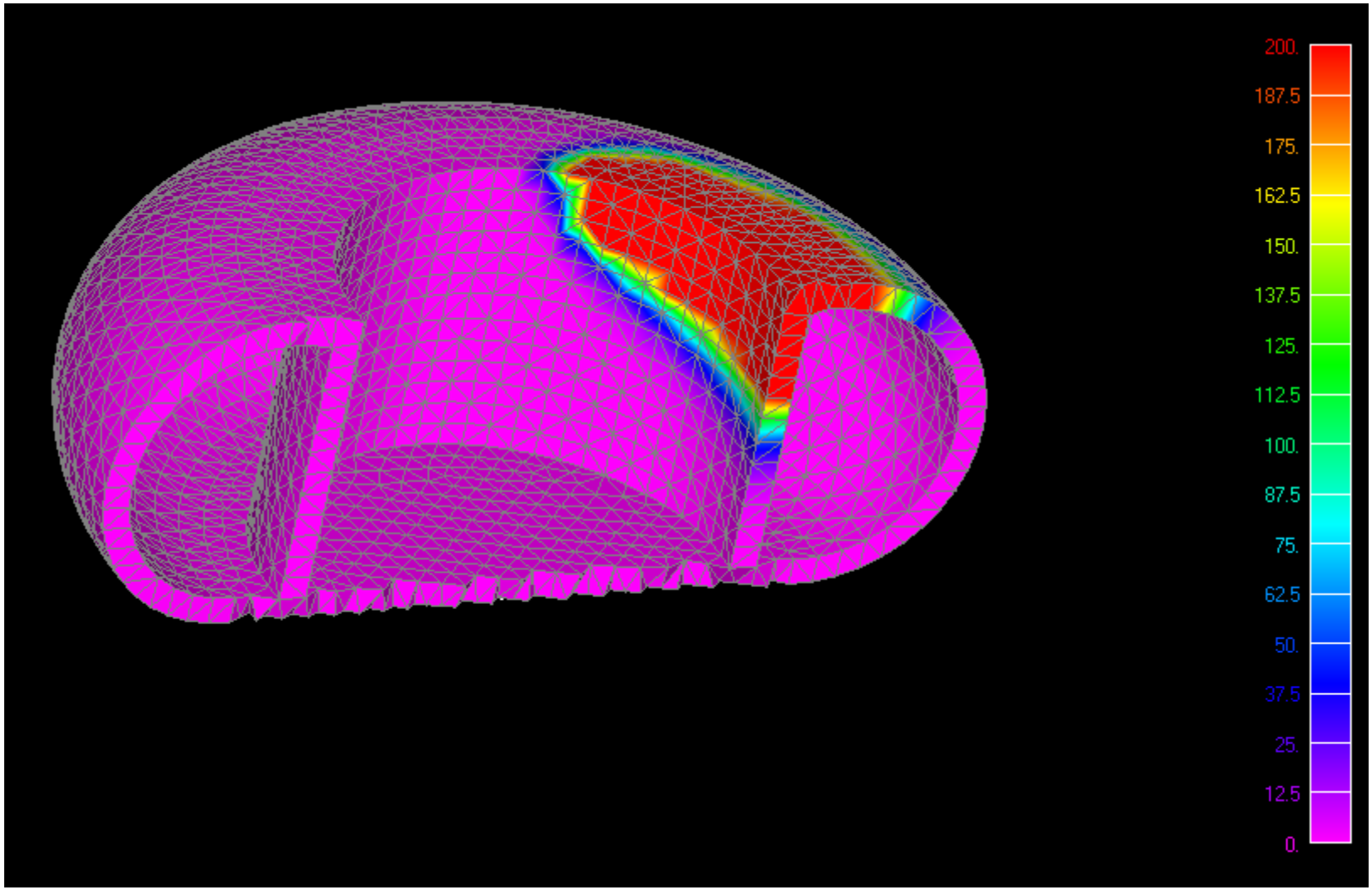
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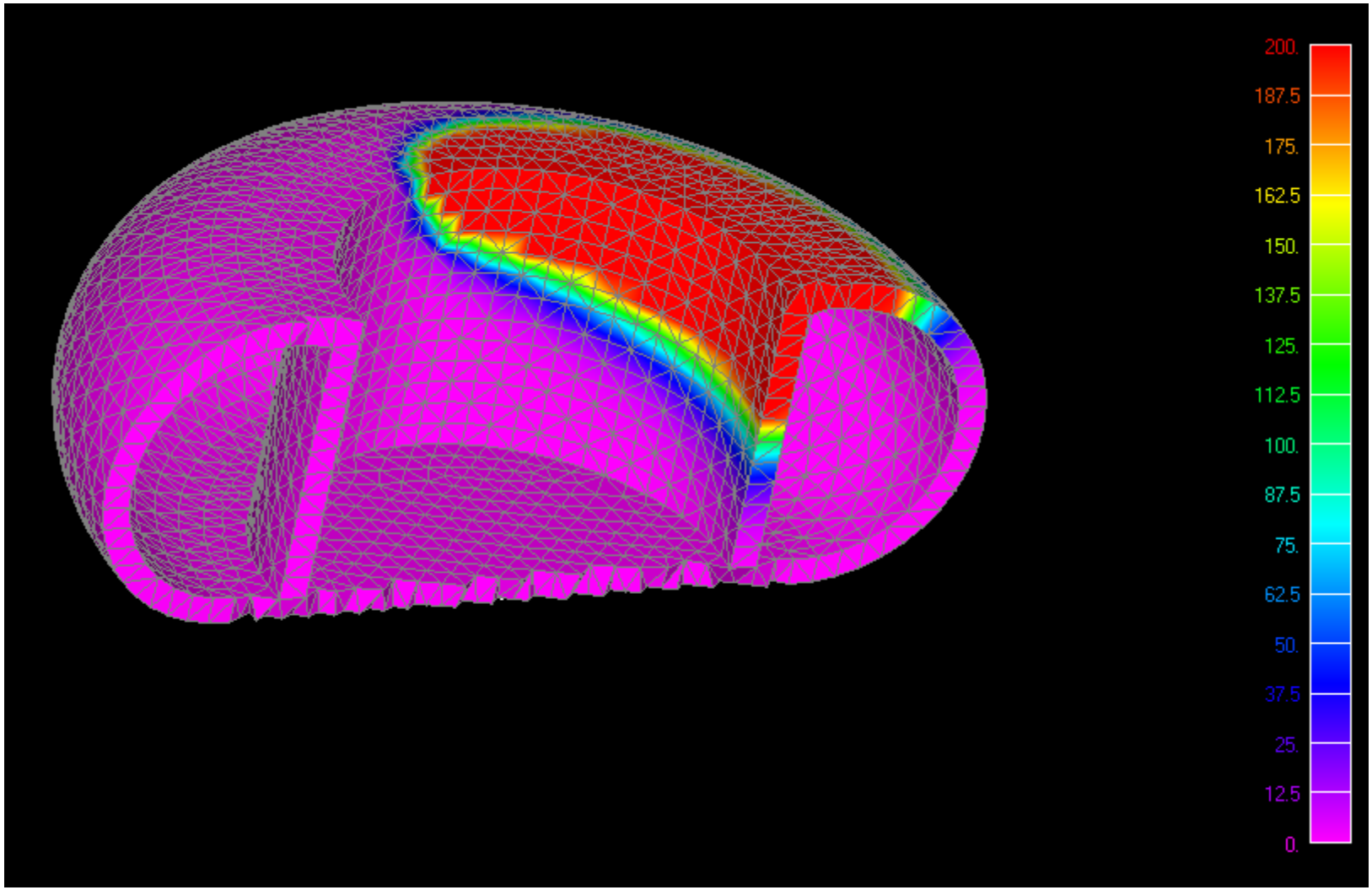
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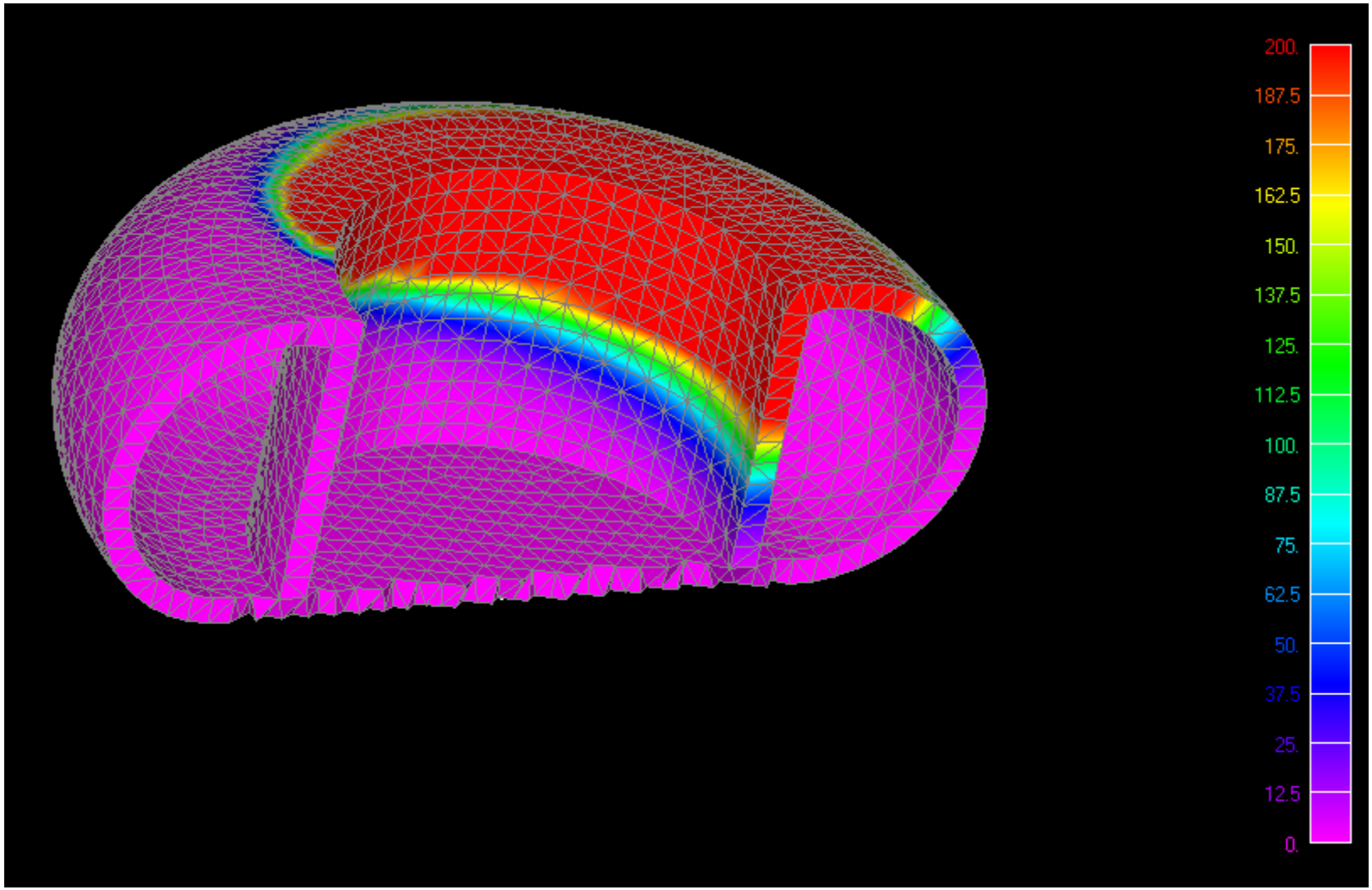
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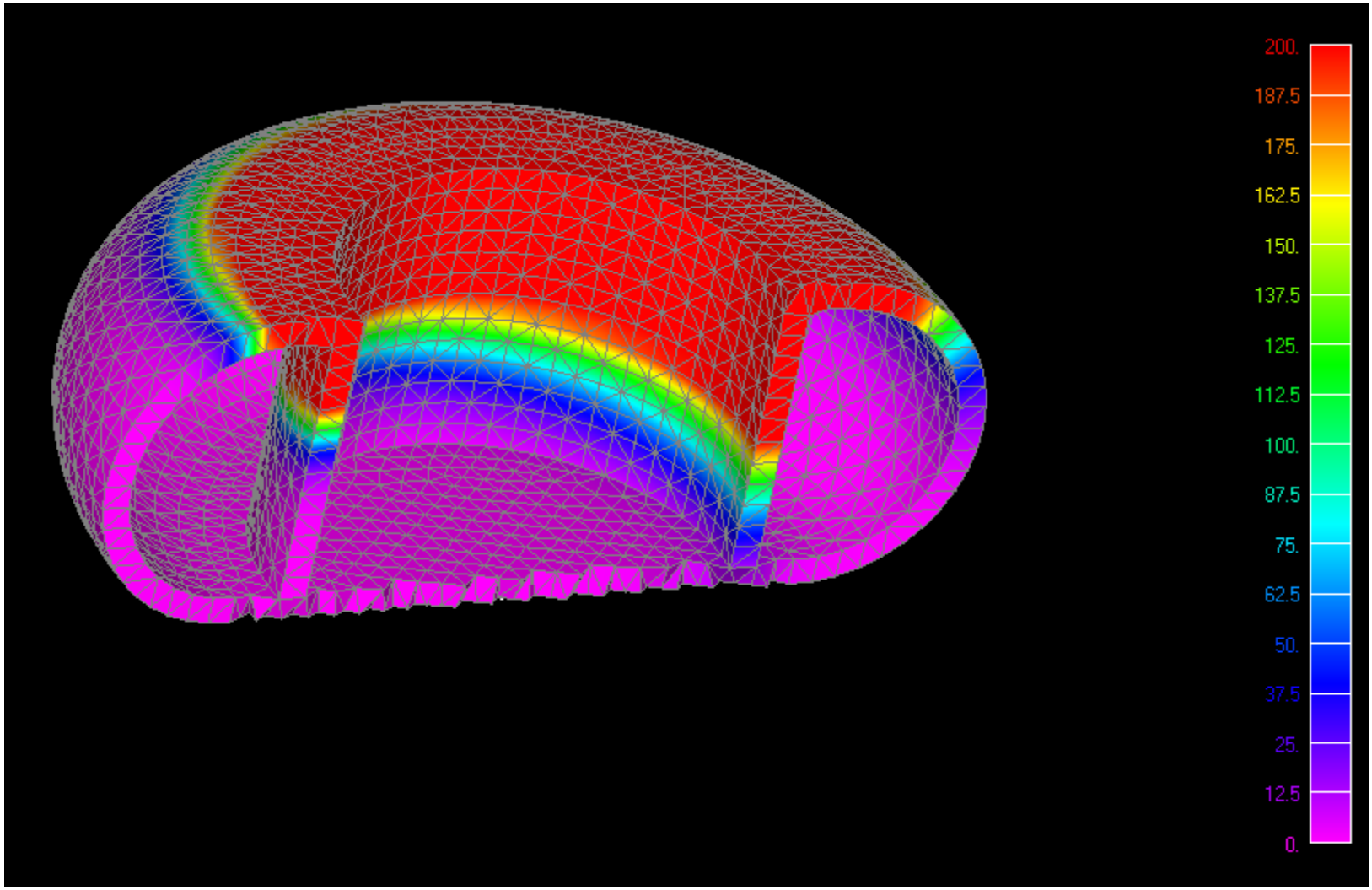
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With SINDA/G much of the complex physics of the weld process can be modeled.

- Weld heat applied to moving weld area
- Thermal connection between parts as the weld progresses
- Temperature dependent conductivity and capacitance
- Phase change – liquid/solid and solid state
- Addition of weld material
- Radiation
- Forced and Natural Convection
- Thermally induced stresses and deformations can then be analyzed using the transient temperature results.