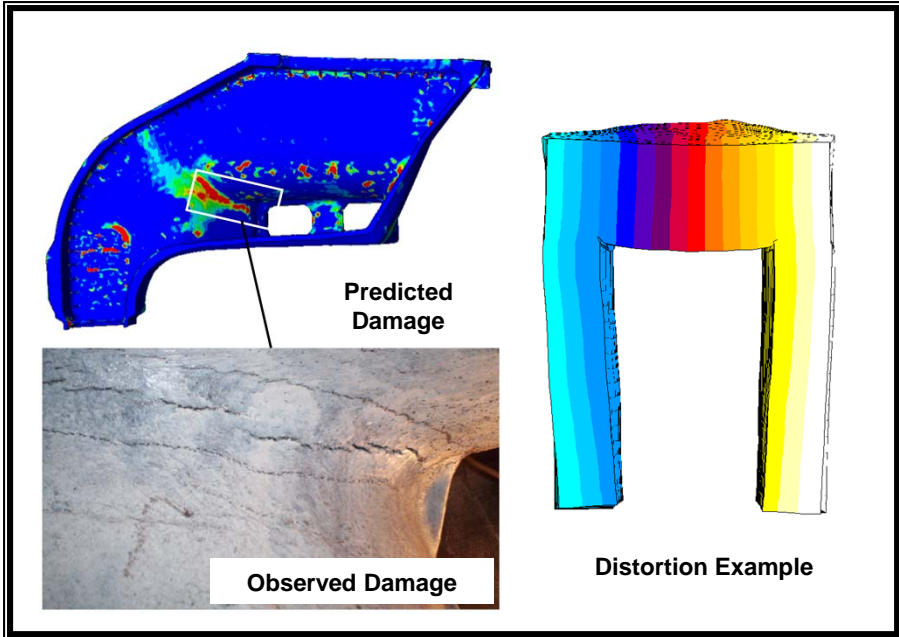


Modeling of Steel Casting Performance: Dimensions and Distortion

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Technical Description

- Develop modeling algorithms for reliable dimension and distortion predictions in steel casting and the necessary mold/metal property data to apply them.
- Incorporate modeling algorithms into commercial software for use by industry and DoD

Benefits

- Reduced costs and lead times resulting from first pour parts produced correctly
- Higher quality parts from reduced variability
- Lighter weight parts from thinner-walled castings
- Improved service reliability

Partners

- University of Iowa, Caterpillar, Oshkosh Truck, SFSA, Sivyer Steel, Bradken-London.



R&D Milestones

- Mechanical properties of bonded sand and steel as a function of temperature
- Develop model to predict dimensional changes, distortions, stresses and cracks
- Validate improved stress model through controlled tests
- Develop model to predict surface shrink and blind riser feeding in steel castings