

Microstructure defects:

- Grain structure prediction

Problem definition

It is important to maintain a single grain in SX castings as the alloys used have low grain boundary strength. Therefore miss-oriented and spurious grains can be a cause of scrap.

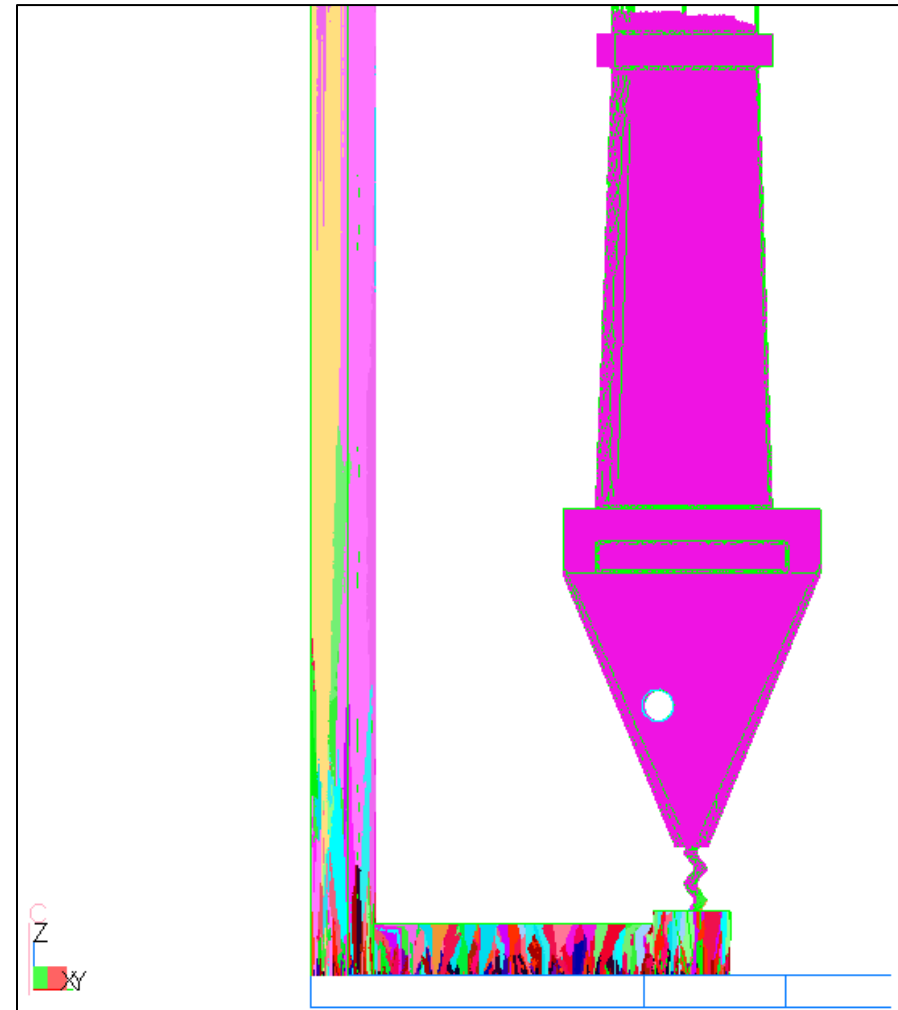
Process modelling

The grain structure that occurs in different regions of an SX casting was predicted. Typically, miss-oriented grains can propagate through the selector, and stray grains can nucleate elsewhere in the casting.

Problem solution

There are numerous parameters that can be altered to reduce miss-oriented and stray grains, and hence improve grain structure.

Defect prediction



Typical grain structure in a single crystal casting

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