

### 3.3 March 4, 2005: Stability in Alloy Solidification

Muddy from last time:

- I thought arcs were the opposite: small gap leads to small heat and vice versa. Depends on the operating conditions. At constant current, this is right, more gap means higher voltage, more plasma and more heating. At constant voltage, it's the opposite: more gap means lower current. Shape stability: constant voltage. Industry practice: constant current, control using voltage and drip short frequency to estimate melt rate and gap size.