1139-35-220 **Agnid Banerjee**, **Mariana Smit Vega Garcia*** (marianag@uw.edu) and **Andrew K. Zeller**.

Higher regularity of the free boundary in the parabolic Signorini problem.

We show that the quotient of two caloric functions which vanish on a portion of an H^{k+a} regular slit is H^{k+a} at the slit, for $k \geq 2$. In the case $k = 1$, we show that the quotient is in H^{1+a} if the slit is assumed to be space-time $C^{1,a}$ regular. This can be thought of as a parabolic analogue of a recent important result in De Silva and Savin. As an application, we show that the free boundary near a regular point of the parabolic thin obstacle problem with zero obstacle is C^∞ regular in space and time.

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