



Examples of singular free boundary points where the function  $u - \psi$  has strict quadratic growth. We expect quadratic growth in the direction of the **red** arrows. The case on the right is more degenerate than the case on the left, and worse for the approximation of the free boundary  $\Gamma$  (depicted in **blue**). In both cases we have that  $\dim \ker \mathbf{A} = 1$ . A discrete free boundary  $\Gamma_\Delta$ , which is at a distance  $\mathcal{O}(\delta(h)^{1/2})$  is depicted in **dashed brown**.