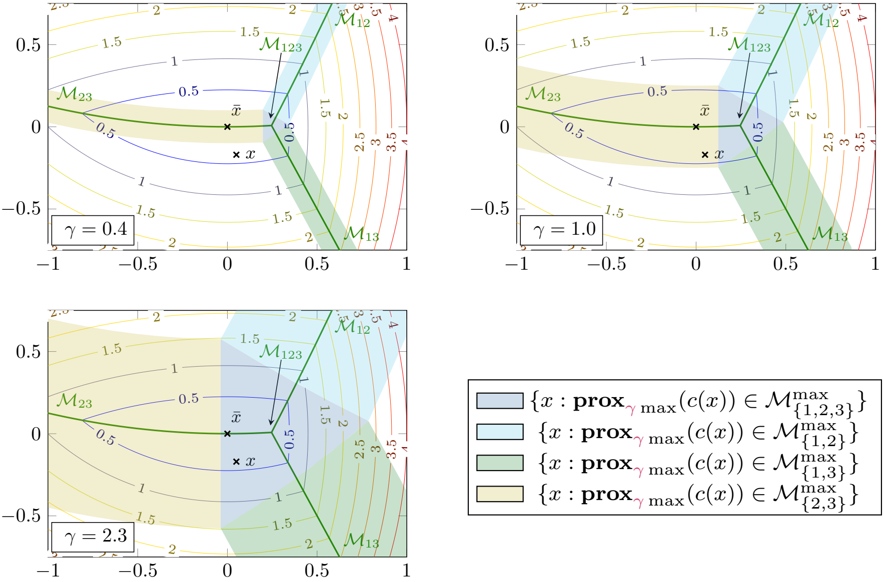

Fig. 4: Illustration of the main result on a maximum of three quadratic functions, with $\bar{x} \in \mathcal{M}^{\max}_{\{1,2\}}$ and a point x near $\bar{x}$. The three figures show the areas where $\mathbf{prox}_{\gamma g} \circ c$ detects manifolds for three stepsizes: $\gamma = 0.4$ (upper left), $\gamma = 1$ (upper right) and $\gamma = 2.3$ (lower left). We see on the upper left fig. that $\mathbf{prox}_{\gamma g} \circ c$ detects no structure from x because γ is too small, and in contrast, on the lower fig., that it wrongly detects too much structure ($\mathcal{M}^{\max}_{\{1,2,3\}}$) because γ is too large. On the upper right fig., the optimal manifold is detected with γ chosen in the right interval.