



FIG. 1. Curves $\mathcal{C}_\alpha = \{(x, y) \in \mathbb{R}^2 : \alpha = 2H(x, y) = x^2 + y^2 - \frac{1}{2}(x^4 + y^4)\}$ (left), and the corresponding period-energy function $T(\alpha)$ (right). Both graphs depict values: $\alpha = \frac{1}{8}, \frac{2}{8}, \frac{3}{8}$ (blue), $\alpha = \frac{1}{2}$ (red), and $\alpha = \frac{5}{8}, \frac{6}{8}, \frac{7}{8}$ (green).