up to an overall shift and orientation (the definition of $f_2(z)$, which involves $\mathbf{k}$, can be found in Eq. (39)). A typical example is shown in Fig. 2 (left). Apart from $\mathbf{k}$ and D, the parameters that enter Eq. (38) for the m-th interval are $\vec{a} = (0, \frac{1}{2}(-1)^m d, 0)$, $\mathcal{R} = \mathbb{1}_3$, $h = \mathbb{1}_2$ and $z_0 = \frac{1}{4}(1 + (-1)^m)$. In all cases discussed here we have also put $\xi_0 = 0$. One verifies that the discontinuities of $\hat{A}_j(z)$ at $z = \mu_m$ are given by $2\pi i \rho_m^j$ with appropriately chosen ζ_a (cmp. Eq. (6)), as discussed in detail in Ref. [10].

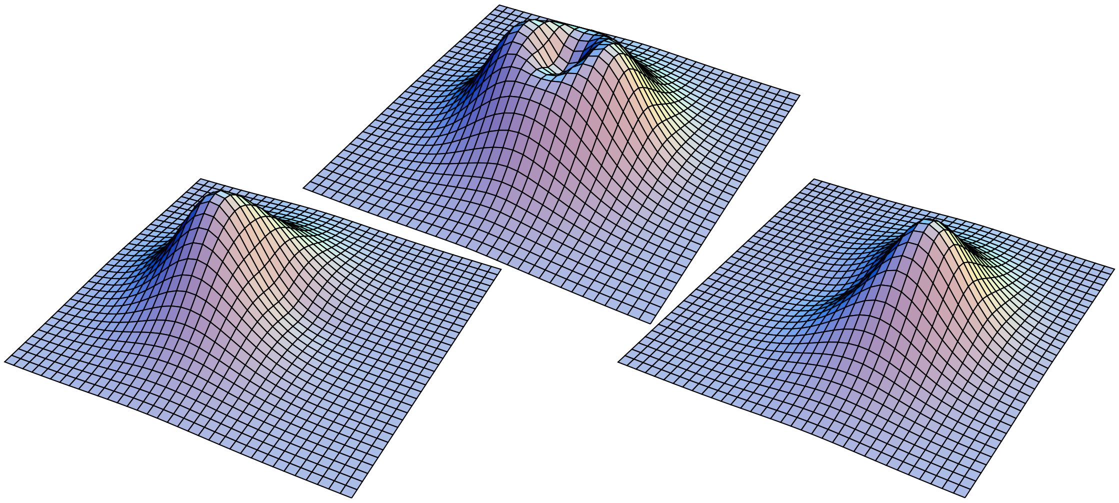

Figure 3: Shown is the energy density (middle) for $\mu_2 = 0.25$, $\mathbf{k} = 0.570$ and $D = 6.915$, in the monopole limit $d \to \infty$ and in the x-z plane through one of the discs for the rectangular configuration, see Fig. 2 (left). On a scale enhanced by a factor $4\pi^2$ are shown the densities for the two monopole zero-modes (left and right).

For the second parametrization (called "crossed") the two discs are coplanar and intersect, see Fig. 2 (right) for a typical example. Their relative orientations can vary between perpendicular and coinciding (for which $\mathbf{k}$ is forced to 1). Here we choose for the parameters in Eq. (38) h and $\mathcal{R}$ to be non-trivial (isospin) rotations around the y-axis with angles $(-1)^m\theta$, resp. $(-1)^m\varphi$, and $\vec{a} = (0, 0, -\frac{1}{2}(-1)^m d\cos\alpha)$, whereas z_0 and ξ_0 are as in the rectangular case. The would-be constituent locations are now given (up to an overall shift and orientation) by

$$\vec{y}_m^{\,(j)} = \Big((-1)^j (4\pi)^{-1} D \sin\varphi\,,\, 0\,,\, (-1)^{m+j}(4\pi)^{-1} D\cos\varphi - \tfrac{1}{2}(-1)^m d\cos\alpha\Big)\,, \tag{51}$$

where $\pm\varphi$ conveniently gives the orientation of each of the two discs with respect to the z-axis. The angle α originates from the definition of ζ_a, which through Eq. (6) determines the discontinuity of $\hat{A}_j(z)$. To ensure the proper matching, the following three equations need to be satisfied [10]

$$D\sin(\theta \pm \varphi)\,[f_3(\tfrac{1}{4}D) \pm f_1(\tfrac{1}{4}D)] = 8\pi d(1 \pm \sin\alpha), \quad D f_2(\tfrac{1}{4}D) + 8\pi d \sin\alpha = 0. \tag{52}$$