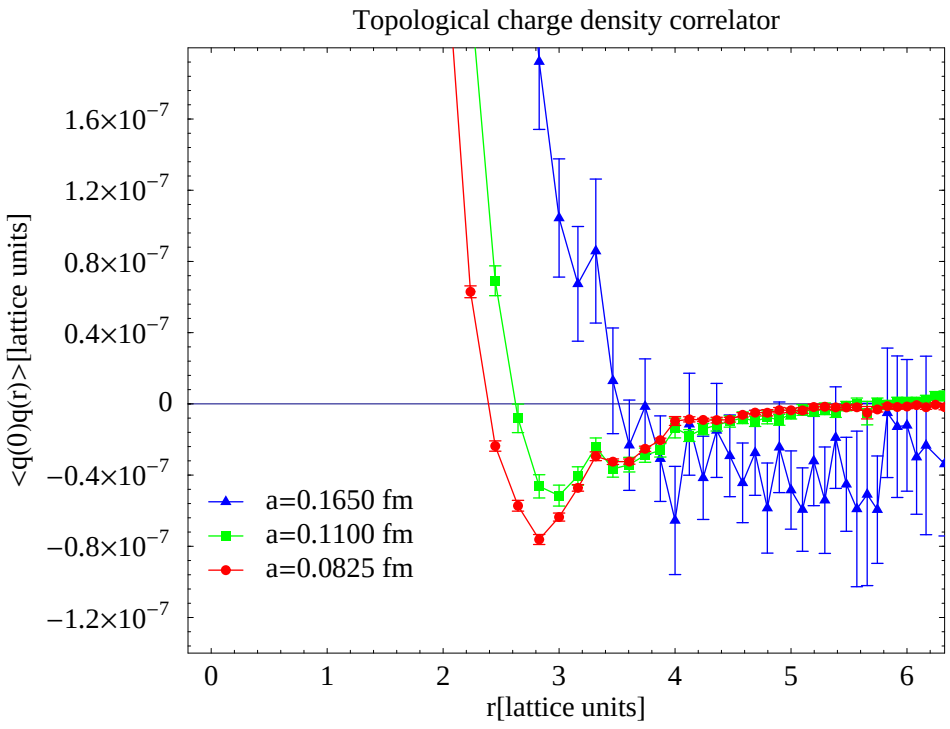

FIG. 1: The two-point topological charge correlator in pure glue QCD. The horizontal axis is in lattice units and results are shown for 3 values of physical lattice spacing a.

roughly equally spaced. Over larger distances they bend and fold such that the local orientation of the topological sandwich decorrelates over distances large compared to the confinement scale. (This last statement is based mainly on visual inspection of CP^{N-1} gauge configurations for various correlation lengths.)

An important characteristic of the observed charge membranes is that both the transverse thickness of the branes and the typical separation between adjacent, oppositely charged branes is roughly constant in lattice units, of order a few lattice spacings. This basic structure leads to the characteristic behavior of the topological charge two-point correlator, which consists of a narrow positive peak at $x \approx 0$ and a negative tail with a pronounced negative dip at a separation of around 2 lattice spacings as shown in Fig. 1 for 4-dimensional $SU(3)$ gauge theory and in Fig. 2 for the 2-dimensional CP^3 model. The position of the negative dip remains roughly the same in lattice units over a wide range of correlation lengths. Thus, both the thickness and the typical spacing of the topological charge sheets goes to zero with the lattice spacing in the continuum limit. At first one might wonder if structure that varies rapidly at the cutoff scale can or should influence long range physics in the continuum limit. But it is easily seen numerically that the membranes are