

# New explicit examples of conformally constrained Willmore minimizers

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**Abstract:** By estimates of Li, Yau and Montiel, Ros, the Clifford torus  $T_{Cliff} := (1/\sqrt{2})(S^1 \times S^1) \subseteq S^3$  minimizes the Willmore energy in its conformal class. We extend this to the flat constant mean curvature tori  $T_r := rS^1 \times \sqrt{1-r^2}S^1 \subseteq S^3$  for  $r \approx 1/\sqrt{2}$ , thereby getting new explicit examples of conformally constrained Willmore minimizers. Actually the minimization of  $T_r$  is slightly stronger, and we obtain supplementing the estimates of Li, Yau and Montiel, Ros, that the Clifford torus minimizes the Willmore energy in an open neighbourhood of its conformal class, where the neighbourhood may depend on the codimension.

**Keywords:** Willmore surfaces, conformal parametrization.

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