

Torus action on S^n and sign-changing solutions for conformally invariant equations

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Abstract. We construct sequences of sign-changing solutions for some conformally invariant semilinear elliptic equation which is defined S^n , when $n \geq 4$. The solutions we obtain have large energy and concentrate along some special submanifolds of S^n . For example, for $n \geq 4$ we obtain sequences of solutions whose energy concentrates along one great circle or finitely many great circles which are linked to each other (and they correspond to *Hopf links* embedded in $S^3 \times \{0\} \subset S^n$). In dimension $n \geq 5$ we obtain sequences of solutions whose energy concentrates along a two-dimensional torus (which corresponds to a *Clifford torus* embedded in $S^3 \times \{0\} \subset S^n$).

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