Radial solutions of Neumann problems involving mean extrinsic curvature and periodic nonlinearities

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Topological and variational methods, and a combination of them, are used to prove existence and multiplicity results for the radial solutions of the homogeneous Neumann problem for equations of the form with continuous data

$$\nabla \cdot \left(\frac{\nabla u}{\sqrt{1-|\nabla u|^2}} \right) = g(|x|,u) + h(|x|)$$

in a ball or an annulus centered at zero $\mathcal{A} \subset \mathbb{R}^N$, when $g(|x|,\cdot)$ has a periodic indefinite integral and $\int_{\mathcal{A}} h(|x|)\,dx$ satisfies some conditions. An important special case is given by $g(|x|,u) = -\mu \sin u$ and a number of open problems are stated.

This is a joint work with Cristian Bereanu and Petru Jebelean.