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A global compactness theorem for critical p-Laplace equations with weights

In this talk, we investigate the compactness of Palais-Smale sequences for a class of critical p-Laplace equations with weights. More precisely, we discuss a Struwe-type decomposition result for Palais-Smale sequences, thereby extending a recent result of Mercuri-Willem (2010) to weighted equations. In sharp contrast to the model case of the unweighted critical p-Laplace equation, all bubbling must occur at the origin. Furthermore, an adapted rescaling law is required to circumvent new difficulties introduced by the weights.