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Nelia Charalambous* (nelia@ucy.ac.cy), Department of Mathematics and Statistics,
University of Cyprus, 1678 Nicosia, Cyprus, and **Zhiqin Lu**, Department of Mathematics,
University of California at Irvine. *The Weyl Criterion for the Spectrum.*

We prove a generalization of Weyl's criterion for the spectrum of a self-adjoint and nonnegative operator on a Hilbert space. We then apply this generalized criterion to study the L^2 spectrum of the Laplacian on k -forms over an open manifold. Using our new criterion we first expand the set of manifolds over which the essential spectrum of the Laplacian on functions is the nonnegative real line. Then we show that the spectrum of the Laplacian on 1-forms always contains the spectrum of the Laplacian on functions. We also compute the essential spectrum of complete shrinking Ricci solitons and weighted manifolds in more general cases. Finally, we apply our criterion to study the spectrum of the Laplacian on k -forms under a continuous deformation of the metric. This work is joint with Zhiqin Lu. (Received August 19, 2014)