Donal O'Regan
Differential equations at resonance

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Abstract: New existence results are presented for the two point singular "resonant" boundary value problem $\frac{1}{p}(py')' + ry + \lambda_m qy = f(t, y, py')$ a.e. on $[0,1]$ with y satisfying Sturm Liouville or Periodic boundary conditions. Here λ_m is the $(m+1)^{st}$ eigenvalue of $\frac{1}{pq}[(pu')' + rpu] + \lambda u = 0$ a.e. on $[0,1]$ with u satisfying Sturm Liouville or Periodic boundary data.

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