1111-53-567 **Isabel M.C. Salavessa*** (isabel.salavessa@ist.utl.pt), Instituto Superior Tecnico, CeFEMA (e CFIF), Edificio Ciencia, piso 3 (Fisica), Av. Rovisco Pais, P-1049-001 Lisboa, Portugal, and **Ana Cristina Ferreira** (anaferreira@math.uminho.pt), Centro de Matematica, Universidade do Minho, Campus de Gualtar, P-4710-057 Braga, Portugal. *Cheng's type comparison results for the principal eigenvalue of a V-drift Laplacian on a Riemannian manifold.*

On a Riemannian manifold (N, g) we consider a metric connection that has vectorial torsion defined by a vector field V. It turns out that the Laplacian for this connection is just the usual drift Laplacian $\Delta^V u = \Delta u - g(V, \nabla u)$. If V is not a gradient, this is a non L^2-self-adjoint operator for any conformally equivalent metric. We consider the V-Dirichlet problem for this Laplacian on a geodesic ball M of N and its principal eigenvalue. Under conditions on the sectional or Ricci curvatures of M and on V we can compare the corresponding principal eigenvalue of Δ^V on M with the one on a ball of the same radius of a suitable model space. The method relies on the use of some generalized Barta's type inequalities and Godoy-Gossez-Paczka's Rayleigh type minimax formula for the principal eigenvalue for non-self-adjoint Dirichlet problem using weighted Sobolev spaces, to obtain generalized Cheng's eigenvalue comparison theorems, partially following a similar path as in previous work of Freitas-Mao-Salavessa. (Received February 09, 2015)