1100-58-264   **Jochen Bruening**, **Franz W Kamber** and **Ken Richardson*** (`k.richardson@tcu.edu`).
Index problems on foliations.

A Riemannian foliation is a partition of a manifold by immersed submanifolds (leaves) such that the normal bundle to the leaves is endowed with an invariant metric. We discuss the so-called basic index problem for such foliations and show how to convert it to an invariant index problem for the action of a compact Lie group of isometries on a Riemannian manifold. We describe our formula for this integer index, which involves characteristic forms and eta invariants. Finally, we demonstrate the use of this formula in computing the index of the basic Euler and basic signature operators. (Received February 09, 2014)