1011-58-143 **M. R. Sandoval*** (mary.sandoval@trincoll.edu), Trinity College, Department of Mathematics, 300 Summit Street, Hartford, CT 06106. *The Singularities of the Wave Trace of the Basic Laplacian on a Riemannian Foliation.*

Techniques of microlocal analysis are applied to the spectral analysis of the basic Laplacian on a Riemannian foliation equipped with a bundle-like metric. The basic Laplacian in this context, refers to the restriction of the ordinary Laplacian on function to functions that are constant along the leaves of the foliation (here it is assumed that the mean curvature form is basic). It is known that in this case, the basic spectrum is a subset of the spectrum of the ordinary Laplacian. The singularities of the wave trace are found to occur at the lengths of certain geodesic arcs that are orthogonal to the closures of the leaves of the foliation. In certain cases, a complete representation of the wave trace can be derived. In other cases, partial representations, valid in the neighborhood of the lengths of certain geodesic arcs that are well-behaved with respect to the foliation, can also be determined. (Received August 23, 2005)