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**TREVOR JONES**, University of New Brunswick  
*Heat Kernel for Open Manifolds*

It is known that for open manifolds with bounded geometry, the differential form heat kernel exists and is unique. Furthermore, it has been shown that the components of the differential form heat kernel are related via the exterior derivative and the coderivative. We will give a proof of this condition for complete manifolds with Ricci curvature bounded below, and then use it to give an integral representation of the heat kernel of degree  $k$ .