

# Wodzicki Residue, Weyl formula and Dirac Operator on $SG$ -case

Ubertino Battisti

*Dipartimento di Matematica  
Universit' a degli studi di Torino  
Via Carlo Alberto 10, 10123, Torino  
Italia*

*ubertino.battisti@unito.it*

**Abstract:** We introduce Wodzicki Residue for  $SG$ -operators  $A \in L_{cl}^{m_1, m_2}$  on manifolds with cylindrical ends using the meromorphic extension of the  $\zeta$ -function of elliptic  $SG$ -operators. In this way we can slightly improve the Weyl formula for operator  $A \in L^{m_1, m_2}$ , provided  $m_1 = m_2 > 0$ . We use moreover the regularized  $\zeta$ -function in order to connect the Dirac operator and the Einstein-Hilbert action on  $\mathbb{R}^n$  endowed with a suitable metric.