



Contribution ID : 52

Type : **Oral presentation**

## Calculating repetitively.III:

*Saturday, 5 July 2014 12:00 (30)*

This talk has two highlights: a. The utility of the Dirac  $\delta$  - function as an aid to repetitive integration in multiple integrals, and b. An extension to 3 + 1 dimensional stationary curved space of a recent effort by the author in 2 + 1 dimensional stationary curved space to determine the zeta function for the Lagrangian density for a real massive scalar field using the Schwinger operator expansion; this is a reworking to advantage by the author of the Antonsen - Bormann idea that was originally proposed by these latter authors for the computation of the heat kernel in curved space. The repetitive nature of the calculation in 2 + 1 dimensional curved space at all higher orders ( $\geq 3$ ) in the gravitational constant  $G$  suggested the use of the Dirac delta-function and one of its integral representations - in that it is convenient to obtain answers, so its utility is also checked in the 3 + 1 dimensional case.

### Summary

**Primary author(s)** : Prof. KAMATH, Gopinath (Indian Institute of Technology Madras)

**Presenter(s)** : Prof. KAMATH, Gopinath (Indian Institute of Technology Madras)

**Session Classification** : Formal Theory Developments

**Track Classification** : Formal Theory Developments