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Leibniz  
Universität  
Hannover

Oberseminar Analysis und Theoretische Physik

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## Relative Phase Shifts for Metaplectic Isotopies Acting on Gaussians

Let  $\rho$  be a positive trace class operator with Gaussian Weyl symbol and  $(S_{\{t\}})$  a one-parameter family of metaplectic operators such that  $S_0$  is the identity. By definition the associated Pancharatnam–Sjöqvist phase  $\phi(t)$  is the argument of  $\text{Tr}(S_{\{t\}}\rho)$ . When  $\rho$  is the rank-one orthogonal projection on a vector  $\psi$  then  $\phi(t)$  is given by Pancharatnam's formula  $\phi(t) = \text{Arg}(S_{\{t\}}\psi | \psi)_{L^2}$ . We show that  $\phi(t)$  can be calculated explicitly by using a generalization of the Conley–Zehnder index we have defined in previous work. This gives us the opportunity to review related notions such as the Leray index and the Maslov index for symplectic paths.

**Dienstag, 14.11.2017, 15:00 Uhr, Raum c311  
Hauptgebäude der Leibniz Universität**

Dazu laden herzlich ein:

Prof. Dr. Wolfram Bauer, Prof. Dr. Joachim Escher, Prof. Dr. Elmar Schrohe,  
Prof. Dr. Christoph Walker, Prof. Dr. Emil Wiedemann