

SAMPEI HIROSE

Shibaura Institute of Technology, JAPAN

Email: [hirose3@shibaura-it.ac.jp](mailto:hirose3@shibaura-it.ac.jp)

## On WKB solutions for a differential system satisfied by an oscillatory integral

This talk considers WKB solutions for the differential system satisfied by the oscillatory integral of the form

$$\psi(x, \eta) = \int e^{\eta F(t, x)} dt, \quad dt = dt_1 \wedge \cdots \wedge dt_m$$

where  $F(t, x)$  is a polynomial. Under suitable assumptions for  $F(t, x)$ , by considering the relationship between the WKB solution and the oscillatory integral, we show that the Borel summability of WKB solutions can be described by a semi-algebraic set. We also discuss the connection formula and resurgence property of WKB solutions, and, if time permits, the representation using WKB solutions of higher residue pairings, which play an important role in the theory of primitive forms.