

## **Extended WKB Analysis for the Vectorial Schrodinger Equations in the Semi-Classical Regime**

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WKB analysis plays an important role in the asymptotic theory for the linear high-frequency wave equations. The classical WKB analysis faces the difficulty due to the appearance of caustics. In this talk, we introduce an asymptotic theory for the vectorial Schrodinger equations in the semi-classical regime. This asymptotic theory, termed as extended WKB analysis, can be taken as an extended version of the classical WKB analysis. The extended WKB analysis is blind to the traditional caustics due to the stubborn choice of position representation for the wave field, and it can provide an approximate wave field with uniform asymptotic accuracy.