Abstract

Quasiperiodic systems, related to irrational numbers, are important space-filling structures without decav nor translational invariance. How to numerically compute these incommensurate systems poses challenges. In this talk, we will present some accurate and efficient methods for quasiperiodic systems based on the arithmetic property of irrational numbers, including periodic approximation method, projection method, point recovery method. finite The corresponding and approximation analysis is also given. Then we will briefly give some applications, such as quasicrystals and phase transitions, grain boundaries, guasiperiodic homogenization, guasiperiodic Schrödinger systems.