

Photonic Valley Crystal

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Topological photonics, which focuses on nontrivial forbidden bands while in gapless interfacial states, provides a degree of freedom to realize photonic spin flow at the boundary of topological photonic crystal. The speaker will present a new type of photonic valley crystal that exhibits valley dependent bulk bands. In this talk, several interesting valley-related behaviors will be explored, such as photonic valley Hall effect, spin-momentum locking in trivial photonic crystal, robust unidirectional propagation, etc. Valley photonics will open a new route for control of spin and topology.