Valley polarized transport through irradiated graphene ARIJIT KUNDU, HERB FERTIG, BABAK SERADJEH, Indiana Univ - Bloomington — Graphene under the application of circularly polarized light can go through Floquet topological transitions between various topological phases. With a drive protocol that breaks the valley symmetry, such transitions can occur at different points in the drive parameter space for different valleys. This may lead to valley polarized transport. We apply this concept to propose geometries for valleytronics devices like valves and transistors, which we theoretically analyze.