1154-57-186 **Ryo Ohashi*** (ryoohashi@kings.edu), 133 North River Street, Wilkes-Barre, PA 18711. *The finite group actions on I-bundle over the projective plane* $\mathbb{P}^2$*.* Preliminary report.

A finite G-action on a manifold M is a monomorphism $\varphi : G \to Homeo(M)$, where G is a finite group. In this talk, M is an I-bundle over the projective plane $\mathbb{P}^2$, where $I = [0, 1]$. We will discuss all finite G-actions on $\mathbb{P}^2 \times I$.

A method is to study actions on $\mathbb{P}^2$. Nootice that its universal covering space is the 2-sphere $\mathbb{S}^2$. Thus, we can lift any acting groups on $\mathbb{P}^2$ to $\widetilde{G}$ on $\mathbb{S}^2$. It has been known the finite group actions on $\mathbb{S}^2$, which is a subgroup of some permutation group S_n. This process enables us to analyze the finite G-actions on $\mathbb{P}^2$ by observing a fundamental region on $\mathbb{S}^2$ with the aid of an appropriate triangulation on $\mathbb{S}^2$.

After establishing the actions on $\mathbb{P}^2$, we may have optimistic feeling to describe the actions on $\mathbb{P}^2 \times I$, the I-bundle over the projective plane since I admits only $\mathbb{Z}_2$-action. However, we may not always obtain $G \times \mathbb{Z}_2$. In fact, there are pitfalls in order to reach the conclusion which will be addressed in the talk. (Received August 21, 2019)