

1116-VE-1856 **Ross Sweet*** (rsweet@math.northwestern.edu), 2033 Sheridan Road, Evanston, IL 60208, and
Takashi Kimura. *Adams Operations on the Virtual K-Theory of $\mathbb{P}(1, n)$.*

We analyze the structure of the virtual (orbifold) K-theory ring of the complex orbifold $\mathbb{P}(1, n)$ and its virtual Adams (or power) operations, by using the non-Abelian localization theorem of Edidin-Graham. In particular, we identify the group of virtual line elements and obtain a natural presentation for the virtual K-theory ring in terms of these virtual line elements. This yields a surjective homomorphism from the virtual K-theory ring of $\mathbb{P}(1, n)$ to the ordinary K-theory ring of a crepant resolution of the cotangent bundle of $\mathbb{P}(1, n)$ which respects the Adams operations. Furthermore, there is a natural subring of the virtual K-theory ring of $\mathbb{P}(1, n)$ which is isomorphic to the ordinary K-theory ring of the resolution. This generalizes the results of Edidin-Jarvis-Kimura who proved the latter for $n = 2, 3$. (Received September 21, 2015)