1125-05-2996 **JiYoon Jung*** (jungj@marshall.edu), **Suhyung An** and **Sangwook Kim**. *Enumeration of k-Fuss-Catalan paths and (k, r)-Fuss-Schröder paths.* Preliminary report.

In this paper we provide three results involving k-Fuss-Catalan paths and (k, r)-Fuss-Schröder paths. First, we enumerate the number of k-Fuss-Catalan paths of type λ. J. H. Przytycki and A. S. Sikora studied k-Fuss-Catalan paths of length n, and we extend the study to k-Fuss-Catalan paths with type λ and m connected components. By taking the sum over m we get the number of k-Fuss-Catalan of type λ. Second, we enumerate the number of (k, r)-Fuss-Schröder paths of type λ. Y. Park and S. Kim studied Schröder paths with type λ and m connected components. Generalizing the results to (k, r)-Fuss-Schröder paths we give a combinatorial interpretation for the number of small (k, r)-Fuss-Schröder paths of type λ by using Chung-Feller style. We also give explicit formula for the number of large (k, r)-Fuss-Schröder paths of type λ with d diagonal steps touching the line $y = kx$, and a description for the number of all large (k, r)- Fuss-Schröder paths of type λ. Finally, we find two sets of sparse noncrossing partitions of $[2(k + 1)n + 1]$ which are in bijection with the set of all small (respectively, large) (k, r)-Fuss-Schröder paths of type λ. (Received September 20, 2016)