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Mitsuhiro Miyazaki* (g53448@kyokyo-u.ac.jp), Fujinomori, Fukakusa, Fushimi-ku, Kyoto, 612-8522, Japan. *On the level property of the Ehrhart ring of the chain polytope of a poset.* Preliminary report.

Let P be a finite poset. Stanley studied two convex polytopes, the order polytope $O(P)$ and the chain polytope $C(P)$. The Ehrhart ring of the order polytope is the Hibi ring on $I(P)$, where $I(P)$ denotes the set of poset ideals of P ordered by inclusion, and studied extensively. In particular, the canonical ideal of a Hibi ring is studied by the present author. In this talk, we report some recent results on the canonical ideal of the Ehrhart ring of a chain polytope, including a characterization of level property of the Ehrhart ring. In particular, we exhibit an example of a poset whose order polytope's Ehrhart ring is level but its chain polytope's Ehrhart ring is not. (Received January 23, 2019)