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Minor element characteristics of melt-origin and crush-origin pseudotachylytes

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Origin of pseudotachylyte is generally divided into melt-related and crush-related types. Melt-origin type contains melt-ralated textures such as glass, glassy material, spherulites, dendritic microlites, vesicles, amygdules, rounded and embayed clasts, and sulfide blebs. In contrast, crush-origin type shows none of these melt textures. However, the development of these textures is dependent on not only maximum temperature reached but also cooling rate. Therefore, the distinguishing between them is difficult. We here adopt the chemical analysis of both types using ICP-mass, and analyzed the trace element and Sr isotope compositions in order to find the good proxy to distinguish their origins. We investigated melt-origin pseudotachylyte from the Asuke Shear Zone and crush-origin pseudotachylyte from the Iida-Matsukawa fault. In this presentation, we show these preliminary results and discuss their characteristics.