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Mark Bly* (blymark83@gmail.com). *Two q -countings related to q -multinomial coefficients*. Preliminary report.

Let V be an n -dimensional vector space over a finite field, and let Δ be the set of sequential arrangements of n -element multisets of the form $\{1^{n_1}, 2^{n_2}, \dots, k^{n_k}\}$. In the spirit of D.Knuth's (1971) providing a q -counting of integer partitions relating to q -binomial coefficients, we provide two q -countings of Δ relating to q -multinomial coefficients: (1) via a map from the set of chains of subspaces of V ; (2) via a map from the set of ordered direct sum decompositions of V . (Received September 20, 2016)