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**Amy Qing Hai Li\*** (qli@wellesley.edu). *Constructing Partial Configuration Spaces Using Limits.*

Given a topological space  $X$ , the configuration space  $\text{Conf}(k, X)$  consists of  $k$ -tuples of distinct points on  $X$ . For example,  $\text{Conf}(2, X)$  is homeomorphic to  $X \times X$  with the diagonal removed. We can generalise this idea to *partial* configuration spaces  $\text{Conf}(n_1, n_2, \dots, n_k, X)$  consisting of  $(n_1 + n_2 + \dots + n_k)$ -tuples of points in  $X$  where elements in each set of  $n_i$  points are free to coincide with each other, but points from different sets must be distinct. To study these spaces, we use methods from category theory. In this talk, we will cover some background on functors between categories and limits of diagrams. By considering a particular functor between an indexing category and the category of topological spaces, we will show that a partial configuration space  $\text{Conf}(n_1, n_2, \dots, n_k, X)$  is the limit of a diagram of ordinary configuration spaces. (Received September 17, 2019)