1138-05-18 **Joseph E. Bonin*** (jbonin@gwu.edu), Department of Mathematics, George Washington University, Washington, DC 20052. *Minor-Closed Classes of Polymatroids.* Preliminary report.

A polymatroid is a function $\rho : 2^E \to \mathbb{Z}$ with all of the properties of a matroid rank function except that $\rho(X)$ may exceed $|X|$. Some polymatroids can be obtained by adding matroid rank functions, that is, for some matroids $M_1, M_2, \ldots, M_k$ on E,

$$\rho(X) = r_{M_1}(X) + r_{M_2}(X) + \cdots + r_{M_k}(X)$$

for all $X \subseteq E$. Murty and Simon (1978) showed that not all polymatroids are of this type. D. Chun (2009) characterized those that arise when $k = 2$ and $M_1 = M\backslash e$ and $M_2 = M/e$ for some matroid M. We consider several minor-closed classes of polymatroids that result by imposing various conditions on $M_1, M_2, \ldots, M_k$; some have attractive excluded-minor characterizations; for others we provide evidence that excluded-minor characterizations would be very difficult to obtain. (Received January 05, 2018)