1128-62-107 **YAN XING*** (`yanz.xing@wsu.edu`), Department of Mathematics and Statistics, Washington State University, Pullman, WA 99164. *Tail Mutual Information of Multivariate Distributions.* Preliminary report.

Abstract: The mutual information (MI) of multiple random variables measures statistical dependence among the variables. Using conditional mutual information, we introduce tail mutual information that measures dependence among multivariate extremes. We show that the conditional mutual information can be expressed in terms of the underlying copula of a multivariate distribution, and that tail mutual information depends only on the tail density of the underlying copula. Our results establish a powerful invariance property of tail mutual information under monotone marginal transformation, which is useful in extreme value analysis. (Received February 17, 2017)