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Xia Liao* (xliao@math.fsu.edu), Department of Mathematics, Florida State University, 208 Love Building, 1017 Academic Way, Tallahassee, FL 32306. *Chern classes of logarithmic vector fields for locally quasi-homogeneous free divisors.*

Let X be a nonsingular complex projective variety and D a locally quasi-homogeneous free divisor in X . In this presentation we report a numerical relation between the Chern class of the sheaf of logarithmic derivations on X with respect to D , and the Chern-Schwartz-MacPherson class of the complement of D in X . Our result confirms a conjectural formula for these classes, at least after push-forward to projective space; it proves the full form of the conjecture for locally quasi-homogeneous free divisors in \mathbb{P}^n . The result generalizes several previously known results. For example, it recovers a formula of M. Mustata and H. Schenck for Chern classes for free hyperplane arrangements. Our main tools are Riemann-Roch and the logarithmic comparison theorem of Calderon-Moreno, Castro-Jimenez, Narvaez-Macarro, and David Mond. As a subproduct of the main argument, we also obtain a schematic Bertini statement for locally quasi-homogeneous divisors. <http://arxiv.org/abs/1205.3843> (Received September 25, 2012)