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Numerical studies of the Zaitsev (Robin Hood) model PERRY FOX, GABRIEL CWILICH, SERGEY BULDYREV, FREDY ZYPMAN, Department of Physics - Yeshiva University — The Zaitsev[1] model of depinning of interfaces has been widely used to discuss motion of dislocations, low temperature flux creep, and more recently dry friction. The properties of this model have been discussed theoretically in one dimension, and numerically verified with precision in the isotropic case. We are studying here the effect of anisotropy in the distribution of the “mass” among the neighbors in the updating of the sites, which is known to modify the critical exponents of the model in one dimension. We have considered the validity of the scaling laws in higher dimensions, which might be relevant for the case of friction [2], by computing several of the exponents of the model for the avalanche size distribution, average avalanche size, avalanche fractal dimension and distribution of jumps between extremal sites of activity. The much richer space of parameters of anisotropy in two dimensions has been explored. [1] S.I. Zaitsev , *Physica* **A189**, 411 (1992). [2] S. Buldyrev, J. Ferrante and F. Zypman *Phys. Rev* **E64**, 066110, (2006)

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