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Modeling invasion of brain tissue by glioblastoma cells: ECM alignment and motility

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A key stage in the development of highly malignant brain tumors (Glioblastoma Multiforme) is invasion of normal brain tissue by motile cells moving through a crowded, complex environment. Evidence from *in vitro* experiments suggests the cell motion is accompanied by considerable deformation and alignment of the extra-cellular matrix (ECM) of the brain. In the case of breast cancer, alignment effects of this sort have been seen *in vivo*. We have modeled features of this system including stress confinement in the non-linear elasticity of the ECM and contact guidance of the cell motion.