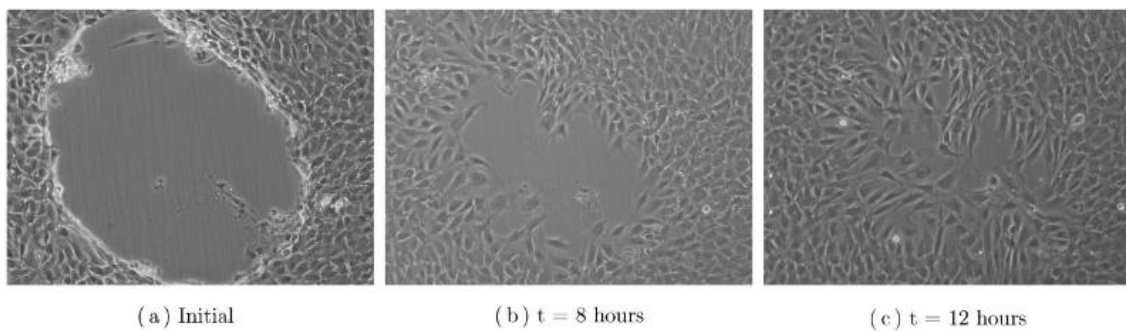


# In Vitro “Wound” Healing: Experimentally Based Phenomenological Modeling

## ***Abstract***

We discuss the applicability of some elementary models for the closure of in vitro “wounds” that are inflicted in monolayer cell cultures (also termed “wound healing assays”). These models can be applied to the simulation of healing of superficial wounds as long as they only concern the epidermis. We test several models that are based on a curvature driven displacement, a simple partial differential equation based model in which the actual cellular density is tracked. Finally, a semi-stochastic cellular based model is evaluated.



*Fig. 1. Myofibroblasts migrating into a cell-free, inflicted “wound” site. The “wound” is originally created with curved, nearly circular boundaries but approximately 8 h post the infliction of injury. The curved boundaries are not identifiable on the micrographs anymore, as cells migrate irregularly into the damaged region.*