Title:	Role of Motar Activity in the Mechanics of Cell Migration
Authors:	Chahar, Chhavi
Keywords:	Motar Activity Mechanics Cell Migration
Issue Date:	May-2023
Publisher:	IISER Mohali
Abstract:	Cell migration is a critical process involved in many physiological and pathological pro- cesses in our body. The understanding of migration mechanisms is also exploited in the fields of tissue engineering and regenerative medicine. Failure of normal cell migration can cause cancer metastasis and other chronic inflammatory diseases. In this thesis, I try to un- derstand the factors determining the possibility of cell migration with the help of a modified motor-clutch model, which incorporates both motor and clutch dynamics. It has been ex- perimentally observed that cells exhibit a biphasic relationship between traction force and substrate stiffness. The maximum traction is achieved at an optimal substrate stiffness. I have used the modified motor-clutch model to reproduce this relationship and to understand the role of motor activity in determining stiffness sensing of the cell microenvironment and changes in the optimal stiffness.
Description:	embargo period
URI:	http://hdl.handle.net/123456789/5440
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