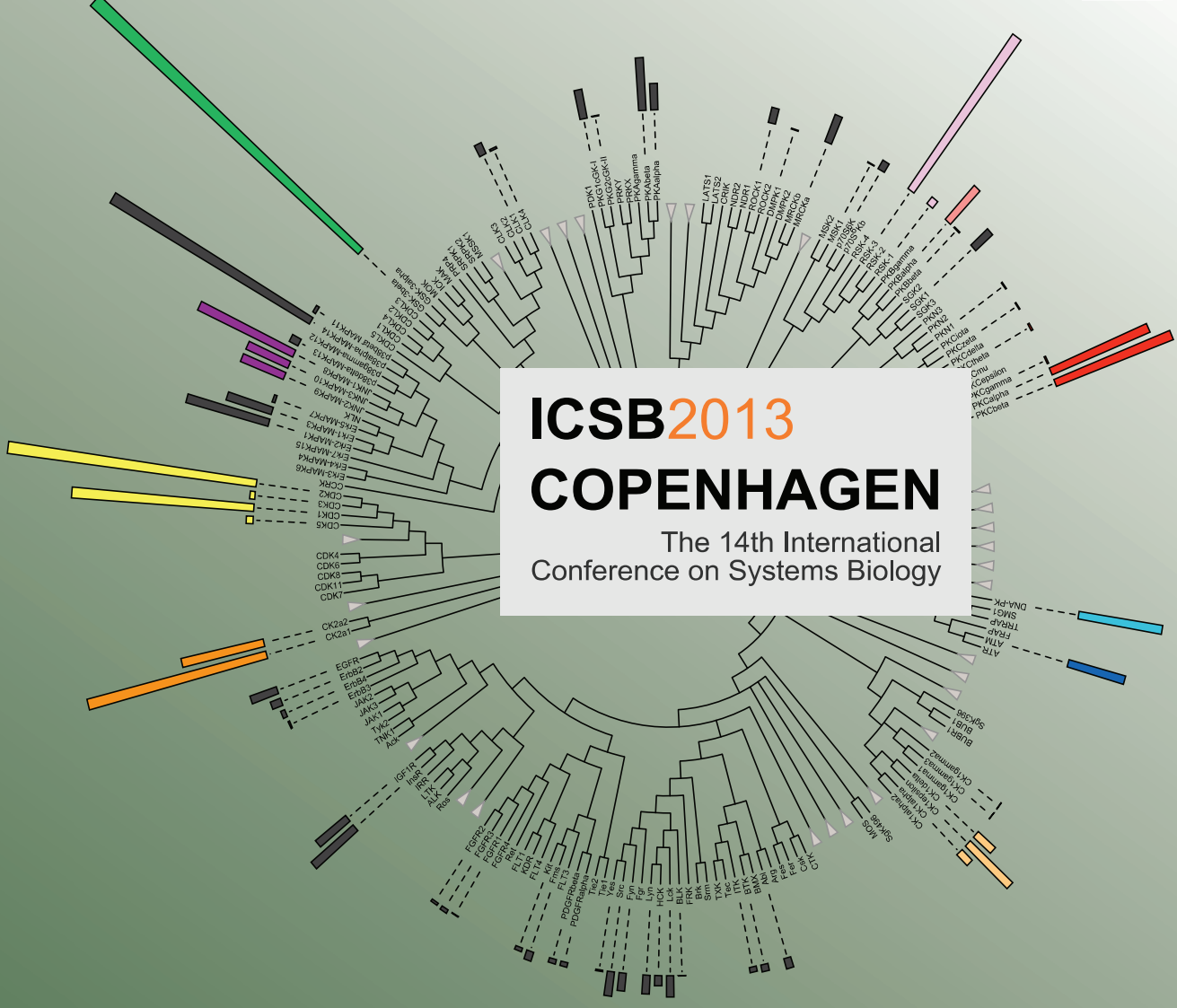


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POSTER SESSION 1

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Cellular interaction network dynamics during homeostasis and cancer formation

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The construction of a network of cell-to-cell contacts networks makes it possible to objectively characterize the patterns and the spatial organisation of tissues. Such networks are highly dynamic depending on the changes of the tissue architecture caused by cell division, death and migration. Local competitive and cooperative cell to cell interactions influence the choice cells make. We present a dynamical network model that can be used to explore the dynamics of a two dimensional tissue architecture in presence of cell to cell interactions. Various forms of experimentally observed types of interactions can be abstracted using game theory. We discuss a model of cooperative and non-cooperative cell-cell communication that can capture the interplay between cellular competition and tissue dynamics. We conclude with an outlook on the possible uses of this approach in modelling tumorigenesis and tissue homeostasis.