# COST Action IC1205 on Computational Social Choice: STSM Report

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Building on some preliminary work, during my visit Haris and I started writing a joint paper that is currently taking shape: "A Taxonomy of Stability Concepts for Random Matching under Priorities."

We consider stability concepts for random matchings where agents have preferences over objects and objects have priorities for the agents.

When matchings are deterministic, the standard stability concept is also known as justified envy-freeness. When matchings can be random, there are a number of natural stability / fairness concepts that coincide with stability / justified envy-freeness.

We present a taxonomy of these stability concepts. We then provide economic interpretations based on various notions of no justified envy or claims, discuss the convexity of stability concepts for random matching and identify logical relations between them.

So far we have obtained a full taxonomy of stability concepts for a model with equal numbers of agents and objects and for strict preferences and priorities. We are currently still working on completing the analysis for some model extensions.

The research visit funded by the COST action was crucial in obtaining our first main results and to plan how to finish the project. We will publish a working paper soon (and submit to an international journal) once we have finished all model extensions.

On Monday September 26th I presented the paper "Object Allocation via Immediate-Acceptance: Characterizations and an Affirmative Action Application" (with Battal Dogan) in the Economic Theory Workshop of UNSW and on September 30th I presented the paper "Non-Revelation Mechanisms for Many-to-Many Matching: Equilibria versus Stability" (joint with Flip Klijn) at Data 61.

I thank the COST Action for the opportunity to make this very productive visit to work with Haris Azis on our joint project.

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