

Two Postdoctoral Positions Are Opening at Politecnico di Torino

Project: ERC Project [TIP-FRESH](#) – Social
Tipping Points for Freshwater Sustainability in
the Global Food System



Principal investigator: Marta Tuninetti, Department of
Environment, Land, and Infrastructure Engineering,
Politecnico di Torino.

Postdoctoral Researcher Position in Mathematical and Statistical Modeling of Food System Tipping Points

ERC Project TIP-FRESH – Social Tipping Points for Freshwater Sustainability in the Global Food System

Department of Environment, Land, and Infrastructure Engineering, Politecnico di Torino, Italy.

Description

The ERC-funded project **TIP-FRESH** (2025-2030), led by Prof. Marta Tuninetti, is seeking one highly motivated Postdoctoral Researcher to work on a joint, interdisciplinary research program at the intersection of food systems, freshwater sustainability, mathematical and statistical modeling. The position is co-advised with Prof Simon Levin (Princeton University) and Prof Francesco Laio (Politecnico di Torino).

The project addresses the growing pressure that global food production and consumption place on freshwater resources. In this context, TIP-FRESH pioneers novel approaches to cope with the freshwater crisis by focusing on social tipping points in the global food system. The idea is that dietary shifts in individual and collective consumption patterns can propagate across social networks, markets, and international trade, triggering cascading effects that ultimately reshape freshwater use.

Research

The postdoctoral researcher will contribute to the understanding of how social tipping dynamics emerge and operate in the global food system.

Specific tasks include (but are not limited to):

- a historical diagnosis of food system evolution from 1961 to 2025 to identify linear/nonlinear dynamics in dietary shifts;
- tailoring statistical methods - such as quantile regression, trend analysis, and state-transition models (e.g., Hidden Markov Models) - to disentangle dietary (o food) system dynamics;
- developing early-opportunities indicators to detect approaching tipping points in food consumption patterns;
- the development of new quantitative and mathematical frameworks to operationalize social tipping points in the food system, with a focus on freshwater sustainability.

Your profile

- Ph.D. in applied mathematics, statistics, physics, engineering, or a closely related quantitative field.
- you have a strong background in mathematical and statistical modeling.
- you have a strong publication record (relative to your career stage) in internationally leading journals.
- you have excellent written and oral communication skills in English.

Activities and Responsibilities

The postdoctoral researcher is expected to:

- conduct independent and collaborative research within the ERC TIP-FRESH project;
- lead and contribute to peer-reviewed publications;
- participate in regular project meetings and scientific discussions;
- contribute to dissemination activities, including conferences and workshops;
- contribute to broad Lab activities (including co-supervision of Ph.D. and M.Sc. students);
- contributing to teaching activities for a maximum of 20 hours per year.

Research Environment

The postdoctoral researcher will be integrated into an interdisciplinary ERC research team at Politecnico di Torino. The project offers a highly international research environment, opportunities for collaboration across disciplines, and exposure to European and global research networks. Mentoring will be provided to support the development of independent academic careers.

Fellowship Details

The position is funded by the European Research Council (ERC). Appointments are expected to be full-time, with a duration of 12 months and the possibility of extension subject to performance and funding availability. Salary and benefits will follow ERC and institutional regulations. The yearly gross salary is € 39.224,29.

Application

Applications should be submitted exclusively through the Polito website from the 15th of March until 15th of April 2026. **Expected starting date of the position: 15 May 2026.**

If you have any questions, please feel free to reach out to marta.tuninetti@polito.it.

Application Materials

To apply, candidates should submit:

- cover letter describing your background, research interests and fit with the TIP-FRESH project;
- curriculum vitae;
- list of publications and/or representative research outputs;
- two contacts information for references.

Postdoctoral Researcher Position in Computational Sociology and Social Network Dynamics

ERC Project TIP-FRESH – Social Tipping Points for Freshwater Sustainability in the Global Food System

Department of Environment, Land, and Infrastructure Engineering, Politecnico di Torino, Italy.

Description

The ERC-funded project **TIP-FRESH** (2025-2030), led by Prof. Marta Tuninetti, is seeking one highly motivated Postdoctoral Researcher to work on a joint, interdisciplinary research program at the intersection of food systems, freshwater sustainability, and social network dynamics. This position is co-advised with Prof Simon Levin (Princeton University) and Prof Luca Ridolfi (Politecnico di Torino).

The project addresses the growing pressure that global food production and consumption place on freshwater resources. In this context, TIP-FRESH pioneers novel approaches to cope with the freshwater crisis by focusing on social tipping points in the global food system. The idea is that dietary shifts in individual and collective consumption patterns can propagate across social networks, markets, and international trade, triggering cascading effects that ultimately reshape freshwater use.

Research

The postdoctoral researcher will contribute to the understanding of how social tipping dynamics emerge and operate in the global food system.

Specific tasks include (but are not limited to):

- developing quantitative frameworks and novel food-related metrics to study how new dietary behaviors and norms spread through social networks;
- analyzing and modeling dietary-oriented complex contagion processes, including threshold effects, reinforcement, and social influence;
- modeling how network structure and social interactions enable dietary shifts to scale from niches to system-wide tipping points.

Your profile

- Ph.D. in network science, computational sociology, statistics, physics, engineering, or a closely related quantitative field.
- you have a strong background in theoretical network modeling.
- you have a strong publication record (relative to your career stage) in internationally leading journals.
- you have excellent written and oral communication skills in English.

Activities and Responsibilities

The postdoctoral researcher is expected to:

- conduct independent and collaborative research within the ERC TIP-FRESH project;
- lead and contribute to peer-reviewed publications;
- participate in regular project meetings and scientific discussions;

- contribute to dissemination activities, including conferences and workshops;
- contribute to broad Lab activities (including co-supervision of Ph.D. and M.Sc. students).
- possibility of contributing to teaching activities for a maximum of 20 hours per year.

Research Environment

The postdoctoral researcher will be integrated into an interdisciplinary ERC research team at Politecnico di Torino. The project offers a highly international research environment, opportunities for collaboration across disciplines, and exposure to European and global research networks. Mentoring will be provided to support the development of independent academic careers.

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