

The Committee unanimously decide to propose Alessio Figalli as the recipient of the fifth Gold Medal Guido Stampacchia with the following motivation:

Alessio Figalli has, in spite of his young age, already given several outstanding contributions to mathematics, showing an amazing fecundity of ideas and an extremely large arsenal of mathematical techniques and expertise.

We recall here:

- the result, in collaboration with Albert Fathi and Ludovic Rifford, on the Mather conjecture in Hamiltonian dynamics on the disconnectedness of the so called Mather quotient of the Aubry set;
- his fundamental contributions in optimal transport, in particular: the impressive series of new results on regularity of optimal transport maps and stability of the Ma-Trudinger-Wang tensor under small deformations of the metric and the existence, the uniqueness, the gradient structure and the Hölder regularity of the solutions to the partial optimal transport;
- his result in collaboration with Guido De Philippis on the optimal regularity for Alexandrov solutions to Monge Ampère equation with density bounded from below away from zero and from above;
- his fundamental results in fluid mechanics, in particular the regularity property for the pressure field of Brenier's generalized incompressible flows, and, in collaboration with Luigi Ambrosio and Maria Colombo, a major breakthrough in the Di Perna-Lions theory of regular flows for non-smooth vector fields;
- his quantitative stability result for sumsets in euclidian spaces, in collaboration with David Jerison.