(I) Variational problems and elliptic equations on the Hardy-Sobolev inequalities

- Attainability of the best constant in the three-dimensional case
- Symmetry properties of solutions for a semilinear elliptic equation involving multiple singularities

(II) Variational problems and some PDEs on the Trudinger-Moser inequalities

- Uniqueness of maximizer
- Properties of solutions of elliptic equation involving the Trudinger-Moser nonlinearity (uniqueness, uniform a priori estimates, bifurcation)
- Adams' inequality, related variational problems and PDEs
- Effect of dimension on maximization problem associated with the Adimurthi-Druet inequalities