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Hanli Tang* (hltang@bnu.edu.cn), Beijing, Beijing 100875, Peoples Rep of China.

Moser-Trudinger inequalities in Lorentz-Sobolev spaces and hyperbolic spaces and Adams inequalities with exact growth condition.

In this talk, we will report some works on both critical singular and subcritical singular and non-singular Moser-Trudinger inequalities in unbounded domains with Lorentz-Sobolev norms. We will also describe sharp Moser-Trudinger on hyperbolic spaces of any dimension with exact growth condition. Finally, we will present sharp Adams inequalities of second order with exact growth condition in all dimensions greater than two. (Received February 24, 2015)