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*Hardy-Sobolev-Maz'ya and Adams inequalities on complex hyperbolic spaces.*

Our aim is to establish the Hardy-Sobolev-Maz'ya inequality and Adams inequality on complex hyperbolic space. By considering differential operators on complex hyperbolic space which are closely related to some CR invariant differential operators on the Heisenberg group and CR sphere and by using, among other things, the Fourier analysis techniques on complex hyperbolic space, we establish the Hardy-Sobolev-Maz'ya inequality on Siegel domain  $\mathcal{U}^n$  and unite ball  $\mathbb{B}_{\mathbb{C}}^n$ . Finally, we establish the sharp Hardy-Adams inequalities and sharp Adams type inequalities on Sobolev spaces of any positive fractional order on the complex hyperbolic spaces. This is joint work with Qiaohua Yang. (Received August 04, 2020)