

Development of a Transportable Atom Gravimeter in HUST

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We are developing a transportable atom gravimeter (TAG) in HUST, which is based on the work of our previous two laboratory-confined atom gravimeters. The vacuum system of our TAG is designed for an atomic fountain configuration, and the corresponding volume is only $0.75 \times 0.45 \times 1.4 \text{ m}^3$ including a two-dimensional magnetic-optical trap (2D-MOT) and an active vibration isolation. With regard to the laser system, two external-cavity diode lasers (ECDLs) are utilized as seed lasers, and two tapered amplifiers (TAs) are followed to provide required laser power. With the ECDLs and TAs included, the whole optical system can be accommodated by a $1 \times 0.7 \text{ m}^2$ breadboard. We have finished the construction of the optical system, and realized atoms loading as well as launching. And currently, we are working on atoms preparation and interfering. The aimed measurement uncertainty of our TAG is better than $5 \mu\text{Gal}$, and we expect to participate in the International Comparison of Absolute Gravimeter (ICAG) held in 2017.