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The Hubble flow model around the Local Group

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We analyzed the velocity field near the Local Group outside the virial zones of Milky Way and Andromeda galaxies on scales from 400 to 1400 kpc. The Hubble flow model allows us to estimate the total mass of the Local Group of $M_{\rm LG} = (2.42 \pm 0.12) \times 10^{12}\ M_\odot$, which is in excellent agreement with the sum of the individual masses of Our Galaxy and Andromeda inside their virial zones $M_{\rm MW+M31} = (2.49 \pm 0.43) \times 10^{12}\ M_\odot$. There is no statistically significant increase of the total mass with distance on a scale from 400 to 1400 kpc. We conclude that essentially the entire mass of the Local Group is clustered within 300-400 kpc around our Galaxy ant the Andromeda Galaxy.

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