

**U09b            Finite volume effects on the observational analysis of the cosmic velocity field**

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Since the cosmic peculiar velocity field depends on small wave-number modes strongly, we cannot probe its universal properties unless we observe a sufficiently large region. We calculate the expected deviation (sample variance) of the peculiar velocity dispersion from its universal value in the case observed volume is finite. Using linear theory we show that the sample variance remains as large as  $\sim 10\%$ , even if the observed region is as deep as  $100h^{-1}\text{Mpc}$  and that it seriously affects the estimation of cosmological parameters from the peculiar velocity field.

[Ref] N. Seto, J. Yokoyama, ApJL., 496, 59, 1998