Fundamental results by Akiva Yaglom in a further applications in geophysics and other natural sciences

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Fundamental results by A.M. Yaglom are in the development of the theory of the stationary stochastic processes, but also the development of the theory of such processes with the stationary increments of an arbitrary order Yaglom was one of the closest pupils by A.N. Kolmogorov, especially in the theory of the Brownian motion and the further development of the turbulence theory proposed by Kolmogorov and Obukhov. He obtained the exact relationship between the second and third moments for a scalar field now known as the Heisenberg-Yaglom equation. He also found that in the inertial interval the acceleration field in the Lagrangian description is delta-time correlated, i.e. its frequency spectrum is there the white noise. Using this and his theory of the processes with the second order stationary increments one easily obtains that the displacement frequency spectrum for the sea surface waves is inversely proportional to the minus four degree of the frequency. Applying these ideas about the acceleration spectra to the spectra of the high energy cosmic rays, frequency-size distributions for earthquakes, tsunamis, landslides, ect., one can explain the observed distributions.