Transportation processes of fluvial sand grains revealed by an OSL approach on flood deposits

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An optically stimulated luminescence (OSL) dating offers burial age of quartz and alkali feldspar grains in sediments and other materials during the last several hundreds kilo-years. An OSL has two important features that (1) luminescence intensity of a mineral grain is proportional with amount of dose absorbed in the grain, and that (2) enough luminescence which implies discharge of absorbed energy results in reset of OSL signal (bleaching). Hence, (2) also suggests that OSL intensity and bleaching percentage, possibly, are used as an index showing conditions of transportation and deposition.

River system is a primary transportation system of sedimentary particles from land to marine. The particles in river system are drained to marine environment as results of processes of transportation and deposition. Bleaching percentages of fluvial deposits formed by flood disasters in 2004 in the Niigata Prefecture are mainly discussed.