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Current and turbiditic events observed in the VAR Canyon.

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In order to infer the impact of the material transported by the Var canyon on the deep-sea benthic fauna, 7 moorings were installed to measure currents and particle fluxes during one year along the canyon from 1200m to 2300m depth (ENVAR-Hermes Programme). From September 2005 to the beginning of December 2005, the hydro dynamical regime and the particle flux were very quiet. On December, the 3rd, a short but high flood of the Var river resulted in an increase of current (25 cm/s) and a very high flow of material ($>$ 100 g /m2/day) on the shallowest stations (1300m and 1600m depth). But no signal of this event was observe on the deepest stations. The duration of the particle clouds was about 25 days. From mid January, a second high increase of current (up to ˜40 cm/sec), lasting ˜10 days, still in relationship with a high flood of the Var river, was able to transport two moorings in the valley to deeper depths (+ 20 or 30 m) and also to bend other moorings (˜50m deeper). The consequence was the transport of a high concentration of material ($>$ 10 g /m2/day) along the entire canyon from 1300m to 2000m depth. Current profile measurements made near the bottom with an ADCP (on the canyon levee, ˜1900m depth) showed that some of these current events are associated to particle content increase (higher acoustic range), some others are not. After these two events, the activities of the canyon become quiet in spring and summer 2006. In conclusion, the two high events observed during one year in the Var canyon are both mainly related to river flood events but with different intensities and spatial spreading.