

Controls of fluorescent tracer retention by soils and sediments

The manuscript "Controls of fluorescent tracer retention by soils and sediments" aimed at determining the use and impact of uranine (UR) and sulforhodamine B (SRB) as artificial tracers in soils and sediments.

The study has been highly improved, although more corrections need to be addressed previous acceptance. In addition, some informal expressions are used which are not acceptable for scientific manuscripts.

- 1- The English is still to revise in the whole paper, as example some parts are specified in the following:

Lines 3-4 pg 1. "Recently, attempts have been made to use such dyes to trace organic pollutants in soil, but the controls of sorption of UR and SRB in soils are still incomplete and poorly standardized".

Lines 10-13 pg 2 : "Some studies suggest that it is generally possible to use fluorescent tracers to mimic the transport of organic pollutants (Sabatini and Austin, 1991; Passeport et al., 2010; Lange et al., 2011; Durst et al., 2013), although detailed insights into internal mobility controlling processes are missing so far, especially for soil systems.".. so far?

Lines 18-20 pg 2: Smart and Laidlaw (1977) investigated the sorption of several dye tracers, amongst others UR and SRB, on different organic (humus, sawdust) and inorganic (kaolinite, limestone, orthoquartzite) materials" . .. amongst others?

Lines:

Lines 24-25 pg 2: "UR and SRB adsorbed stronger on positively charged surfaces than on negatively charged ones" .. ones?

Lines 29-30 pg 2: "In the past, UR and SRB fluorescence tracers are mainly used in hydrogeological research to identify water flow in saturated zones such as aquifers and karst regions" .. In the past.. are..?

Lines 23-24 pg 5 : "In the following, the tracer-soil suspension was agitated for 42h until sorption equilibrium" .. in the following?

Line 23 pg 7 : "The adsorption of UR in top- and subsoil strongly decreased with increasing pH" should be corrected to "The adsorption of UR in top- and subsoil strongly decreased by increasing pH" and accordingly all similar sentences.

- 2- Please better explain the following sentences:

Lines 17-18 pg 2:"A few sorption studies of fluorescent tracers were carried out using pure organic or inorganic sorbents but the controls of sorption were examined rather by random than by systematically controlled experiments (Tab.1)".

- 3- In the introduction section on the paper it should be specified what types of contaminant behaviour are better described by using uranine (UR) and sulforhodamine B (SRB) dyes.

- 4- The authors describe both UR and SRB to be good tracers to predict the fate and transport of similar substances and analyse flow pathways, measure water velocities and determine hydrodynamic dispersion in groundwater, although their experiments are limited to consider batch tests and to obtain sorption isotherms. They should indicate why they only considered them.