Supplementary Materials

Experiment by De Sutter R., Huygens M. and Verhoeven R. [48]

De Sutter et al. in an article from 1998 [48] presented the results of laboratory experiments carried out at the University of Ghent (here in after abbreviated as UGhent), which included measurements of the transport of sandy sediments with cohesive admixtures in storm sewers. Figure A1 shows a schematic diagram of the test stand. The tests were carried out in a tilting channel with a length of 11m and a semi-circular cross-section with an internal diameter of 0.39m. The inclination of the channel bed was set at 0.3%. The actual measurement section of the sewer, 4m long, is located in the central part of the station. Measurements carried out at Ghent University were for sand with a representative diameter of $d_{50} = 0.32$mm. Clay was used as the cohesive admixture.

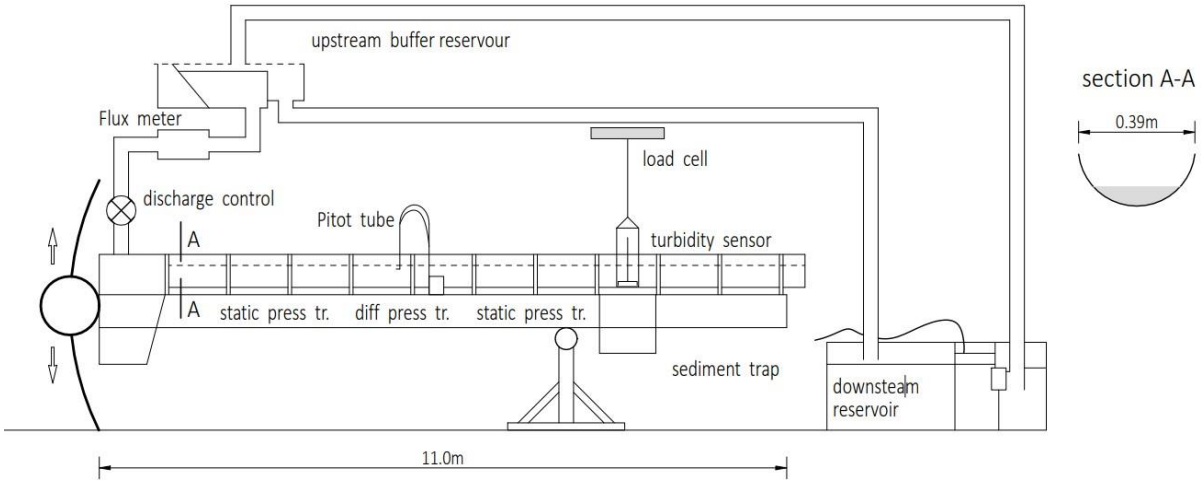

Figure S1. Experimental setup for steady flow measurements by De Sutter et al. [48].

Experiment by Torfs [63]

The influence of cohesive admixtures on sediment transport in the estuaries was studied at the University of Luven (hereinafter abbreviated as ULuven) of 1995. Laboratory tests were carried out in a canal with a closed water recirculation system. Figure A2 shows the schematic diagram of the test stand. The 9m long channel, made mainly of wood and supported by a steel structure, could be tilted to a maximum inclination of 4%. Square channel cross-section: 0.40m wide and 0.40m deep. Representative diameter of sand $d_{50} = 0.23$mm. Natural mud, kaolinite and montmorillonite were used as cohesive admixtures.

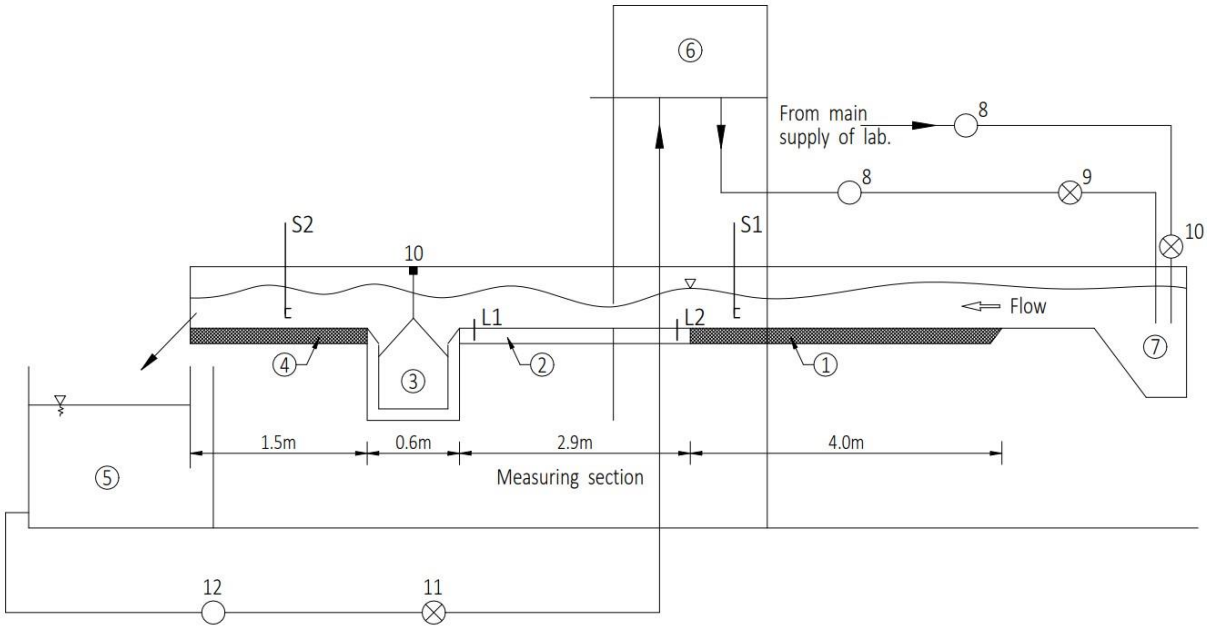

Figure S2. Scheme of the test stand by Torfs [63]. Legend: 1 – inflow area; 2 – measuring section (sediment); 3 – sediment siphon; 4 – outflow section; 5 – lower tank; 6- upper tank; 7 - channel tank; 8 - flow meter; 9 - solenoid valve; 10 - valves; 11 - pump; 12- load cell; 13- Prandtl tubes.

Experiment by Alvarez - Hernandez [45]

Alvarez - Hernandez [45] presented the results of laboratory experiments conducted at the University of Newcastle (hereinafter abbreviated as UNewc) of 1990. In Figure A3 a diagram of the test stand is presented.

Experimental works were carried out in two channels with a circular cross-section and diameters of 154mm and 302mm, but most of the work was carried out in a channel with a diameter of 154mm in a wide range of hydrodynamic extortions. Measurements with the free surface of water with sediment of $d_{50} = 0.90$mm diameter were selected for the analysis. The analysis of the cohesion effect was carried out for the experiments during which laponite was used as a substance introducing cohesion forces in the mixture.

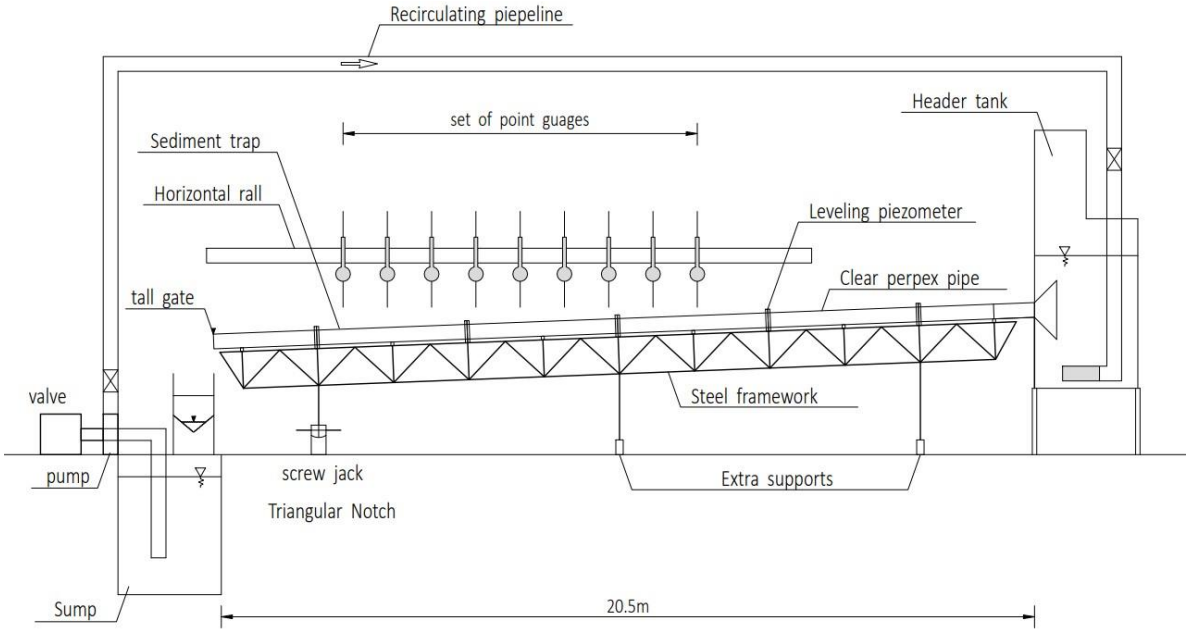

Figure S3. Scheme of the test by Alvarez – Hernandez [45].