**Fig. 1.** Sampling stations of settling material and sediments in the metropolitan coastal area of the Rio de la Plata estuary, near Buenos Aires main sewer (BA) and at a northern site in the Uruguay River (N).

**Fig. 2.** Relationship between river discharge and total particle flux at Buenos Aires (black circles) and North (grey squares) sites during warm (September to March, solid markers) and cold months (April to August, open markers). Note the logarithmic scale on the y-axis.

**Fig. 3.** Temporal variation of total particle flux (solid line, left axis) and total sterol concentration in settling material (dotted line, right axis) at Buenos Aires (top panel) and North (bottom panel). The boxplot inserts shows the averages for warm months (September to March) and cold months (April to August) for total particle flux (black boxes) and total sterols (white boxes).

**Fig. 4.** Sterol composition of settling material (top panel) and sediments (bottom panel) at Buenos Aires (BA, black bars, left pie chart) and North (N, grey bars, right pie chart). Pie charts show proportions of cholesterol, fecal sterols, phytosterols and other sterols. Bar graphs show individual sterols concentrations, in a dry weight basis (note the logarithmic scale).

**Fig. 5.** Box plots of different sterol ratios from Buenos Aires (black) and North (grey) in settling material (filled boxes) and sediment (open boxes). Copr/epiCop: coprostanol/(coprostanol + epicoprostanol), Cop/ethylCop: coprostanol/(coprostanol + ethylcoprostanol), Sito/ethylCop: β-sitosterol/(β-sitosterol + ethylcoprostanol, Chnol/Chrol: cholesterol/(cholesterol + cholestanol) All ratios were significantly different between Buenos Aires and North (p<0.0001).

**Fig. 6.** Principal component analysis of sterol composition of settling particles (solid circles) and sediments (open squares) from Buenos Aires (black) and North (grey).

**Fig. 7.** Accumulation efficiencies of sterols from settling material in superficial sediments (%, bars, left axis) and vertical fluxes (points with standard error bars, right axis) for BA (upper panel) and N (bottom panel). Horizontal dotted lines indicate accumulation efficiency of total sterols. Minor sterols (<1% of total sterols) were excluded from calculations.