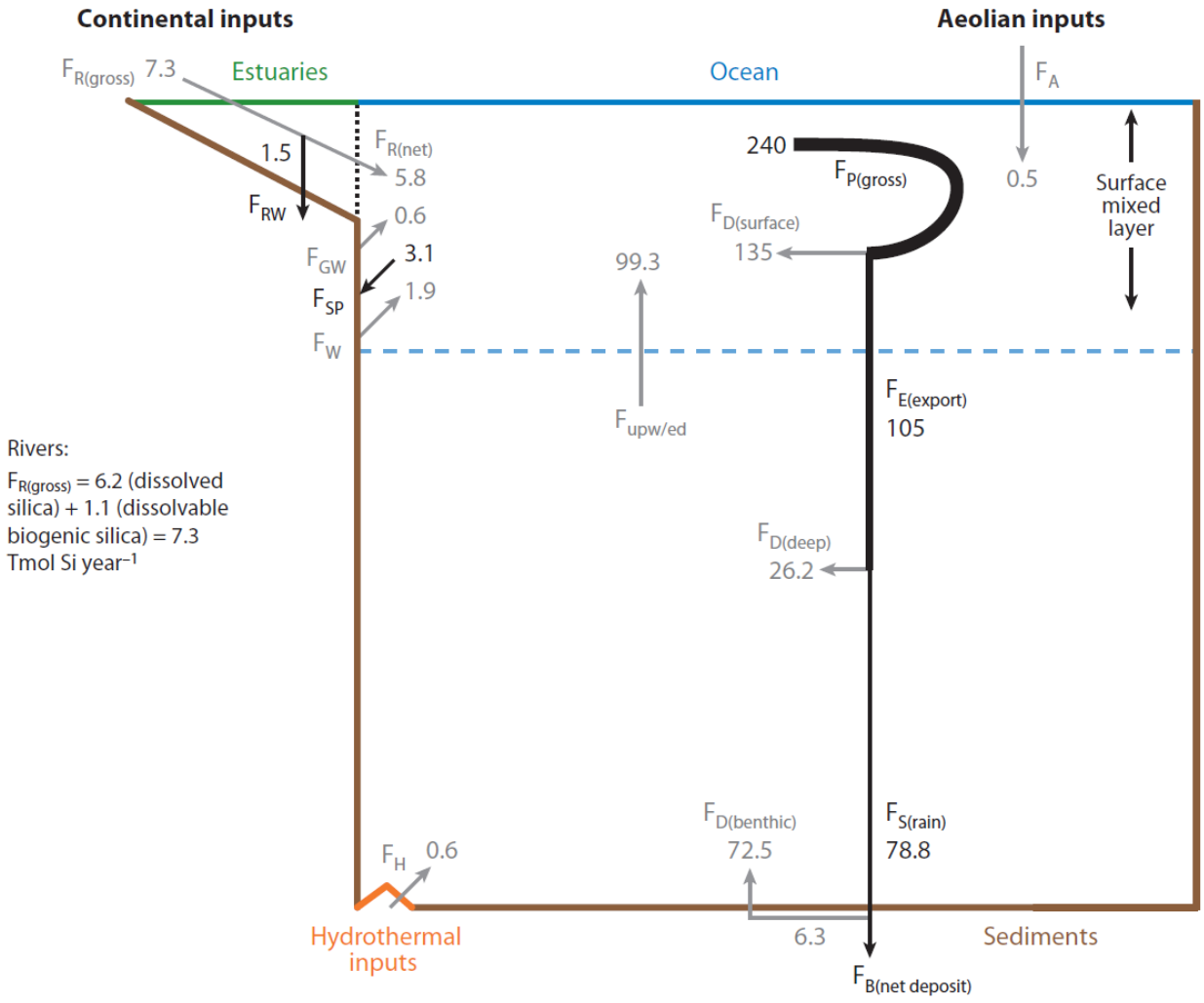

Figure 1

Biogeochemical cycle of silicon in the world ocean at steady state: a possible balance that is in reasonable agreement with the individual range of each flux (F). The dotted line represents the limit between the estuaries and the ocean. Gray arrows represent fluxes of silicic acid (dissolved silica) and black arrows represent fluxes of particulate biogenic silica; all fluxes are in teramoles of silicon per year. Abbreviations: $F_{R(gross)}$, gross river inputs; $F_{R(net)}$, net river inputs; F_{RW}, deposits of biogenic silica and reverse weathering in estuaries; F_{GW}, groundwater flux; F_A, aeolian inputs; F_H, hydrothermal inputs; F_W, seafloor weathering inputs; $F_{P(gross)}$, biogenic silica gross production; $F_{D(surface)}$, flux of silicic acid recycled in the surface reservoir; $F_{E(export)}$, flux of biogenic silica exported toward the deep reservoir; $F_{D(deep)}$, flux of silicic acid recycled in deep waters; $F_{D(benthic)}$, flux of silicic acid recycled at the sediment-water interface; $F_{S(rain)}$, flux of biogenic silica that reaches the sediment-water interface; $F_{upw/ed}$, flux of silicic acid transferred from the deep reservoir to the surface mixed layer (upwelling, eddy diffusion); $F_{B(netdeposit)}$, net deposit of biogenic silica in coastal and abyssal sediments; F_{SP}, net sink of biogenic silica in sponges on continental shelves. Adapted from Tréguer et al. (1995).