Flux of elements in river water flowing into the sea from Chinese continent

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Some nutrient and heavy metal elements' fluxes flowing into the sea were assessed during a one-year period through 32 main rivers into the sea in China. In this survey, we collected suspended matter (SPM) and filtering water samples respectively in wet and dry seasons and bottom mud in dry. Water samples were pumped through 0.45μm nylon membranes. We calculated the flux through element concentrations in SPM and filtered water combined with rivers runoff data.

Table 1 shows the flux of some elements for 32 rivers(R-Flux) and estimated flux of Chinese continent (T-Flux). And it shows the average ratio of SPM and dissolved forms (SPM-rate and Water-rate) when rivers reach to shallow sea.

The results show the giant difference among different elements' flux. And it also show difference between average ratio of SPM and filtered water forms when rivers reach to shallow sea. Ratio of dissolved form for Ca, K, Mg, Na, As and Zn when river water migrates to sea takes up over 70%, while SPM form takes up domination for Fe, Pb, Cd and Cu.

Table 1 Flux of elements flowing into the sea and main transport forms for Chinese continental rivers(flux units: ton)

Element	R-Flux	T-flux	SPM-rate(%)	Water-rate(%)
As	4301	4494	27.5	72.5
Ca	69089129	72181089	3.3	96.7
Cd	110.9	115.8	64.5	35.5
Cu	10221	10678	62.9	37.1
Fe	4029673	4210014	97.5	2.5
Hg	24.7	25.8	42.9	57.1
K	5476964	5722075	7.8	92.2
Mg	17145829	17913160	6.2	93.8
Na	35814027	37416819	0.2	99.8
P	246259	257279	42.3	57.7
Pb	7309	7636	89.1	10.9
Zn	66834	69825	24.7	75.3