Electronic Supplementary Materials

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Effects of the mixing degree upstream of the diverging area on the pollutant allocation characteristics of a Braided River

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Table S1 Gaussian fitting results (branching form 1)

Discharge point	L_f（cm）	bottom layer			surface layer		
		σ（cm）	R^2	PP（cm）	σ（cm）	R^2	PP（cm）
Discharge point 1	102.4	0.73	1.000	-15.1	0.74	1.000	-15.0
Discharge point 2	177.4	2.02	0.999	-15.0	1.94	1.000	-15.0
Discharge point 3	227.4	2.52	0.990	-14.9	2.58	0. 995	-14.9
Discharge point 4	277.4	3.11	0.995	-15.2	3.04	0.997	-15.0
Discharge point 5	377.4	4.02	0.998	-15.0	3.80	0.999	-15.0
Discharge point 6	437.4	4.58	0.998	-14.9	4.20	0.998	-15.1
Discharge point 7	527.4	4.89	0.999	-14.9	4.76	1.000	-15.0
Discharge point 8	577.4	5.35	0.999	-14.7	4.83	0.999	-14.8
Discharge point 9	677.4	5.84	0.998	-14.8	4.99	0.997	-14.9
Discharge point 10	777.4	6.31	0.997	-14.7	4.94	0.997	-15.2

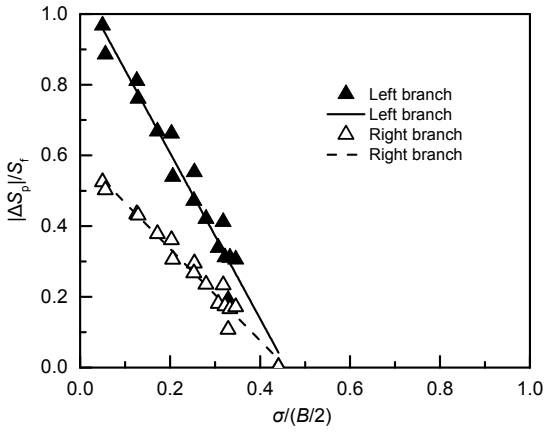

Fig. S2 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: surface layer under branching form 1

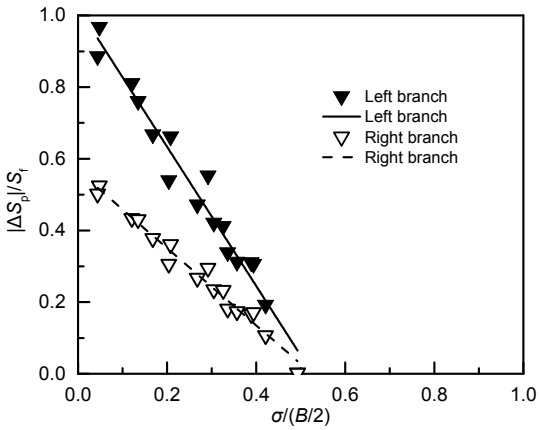

Fig. S3 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: bottom layer under branching form 1

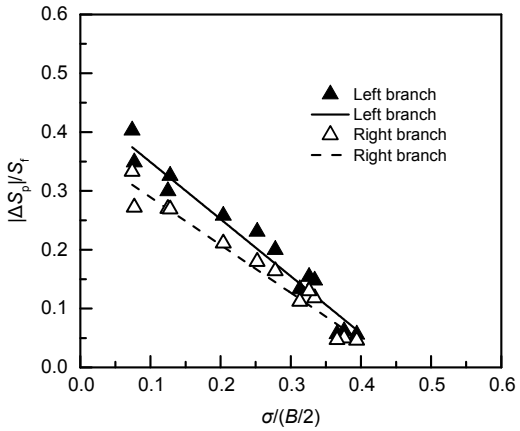

Fig. S4 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: surface layer under branching form 2

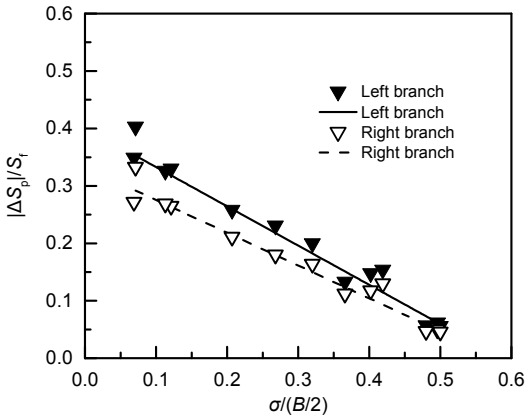

Fig. S5 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: bottom layer under branching form 2

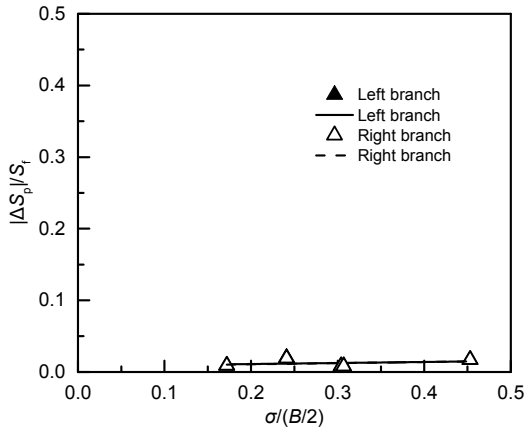

Fig. S6 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: surface layer under branching form 3

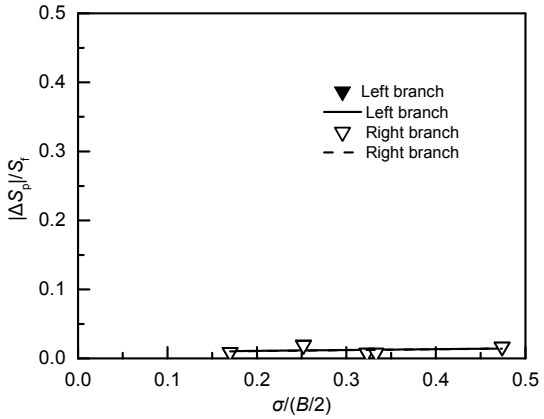

Fig. S7 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: bottom layer under branching form 3

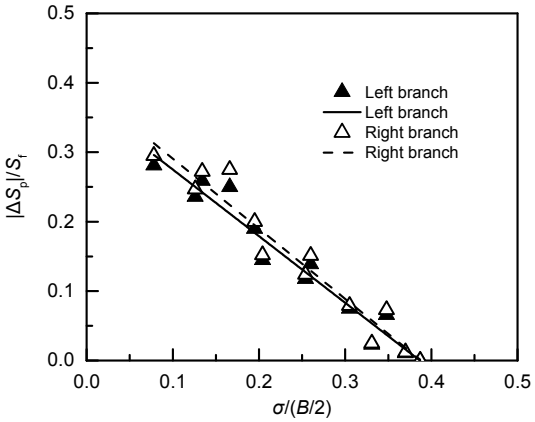

Fig. S8 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: surface layer under branching form 4

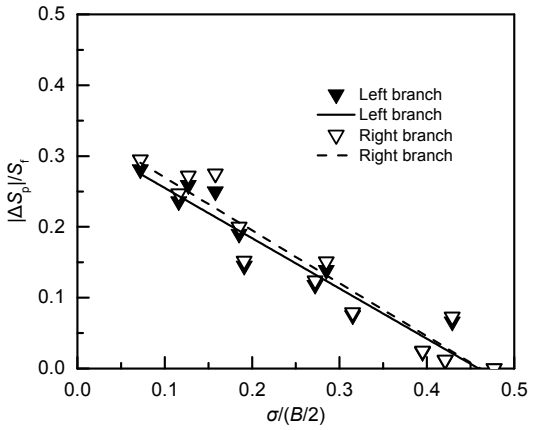

Fig. S9 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: bottom layer under branching form 4

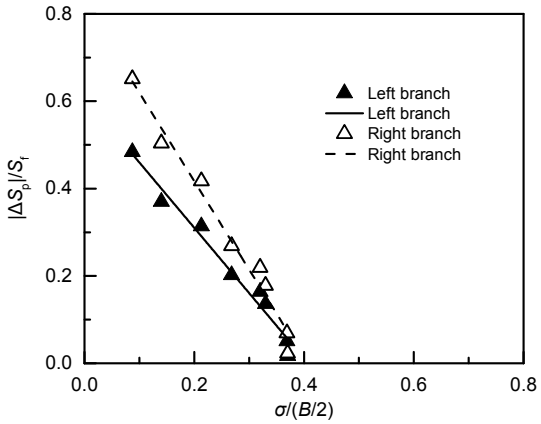

Fig. S10 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: surface layer under branching form 6

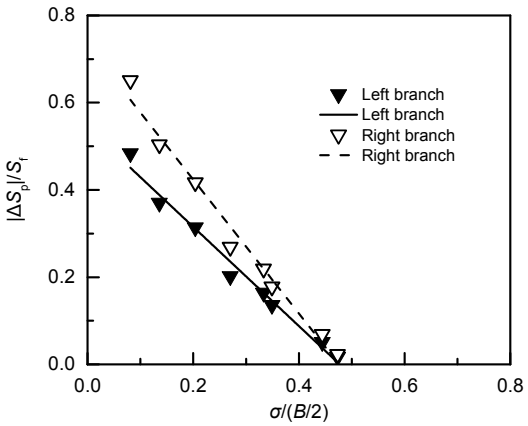

Fig. S11 Relationship between $|\Delta S_p|/S_f$ and $\sigma/(B/2)$: bottom layer under branching form 6

Table **S12** Linear relationship parameters of $\frac{|\Delta S_p|}{S_f}$ and $\frac{\sigma}{B/2}$

branching form	1 surface layer & left branch		2 surface layer & right branch		3 bottom layer & left branch		4 bottom layer & right branch		Symmetry
	a	*b*	*a*	*b*	*a*	*b*	*a*	*b*	
branching form 1	1.08	-2.34	0.60	-1.30	1.02	-1.94	0.57	-1.08	asymmetric branching
branching form 2	0.45	-0.97	0.37	-0.81	0.40	-0.68	0.33	-0.57	asymmetric branching
branching form 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Symmetric branching
branching form 4	0.37	-0.93	0.39	-0.98	0.32	-0.70	0.34	-0.73	asymmetric branching
branching form 5	0.46	-1.27	0.58	-1.60	0.41	-0.95	0.52	-1.20	asymmetric branching
branching form 6	0.61	-1.50	0.82	-2.02	0.54	-1.14	0.73	-1.54	asymmetric branching

Table **S13** Fitting equation of the linear relationship between a and θ_2

Water layer	branch	$\theta_2 < 45°$	$\theta_2 > 45°$
surface layer	left branch	$a = 1.59 - 0.04 \times \theta_2$	$a = -0.50 + 0.01 \times \theta_2$
	right branch	$a = 0.92 - 0.02 \times \theta_2$	$a = -0.74 + 0.02 \times \theta_2$
bottom layer	left branch	$a = 1.49 - 0.03 \times \theta_2$	$a = -0.44 + 0.01 \times \theta_2$
	right branch	$a = 0.87 - 0.02 \times \theta_2$	$a = -0.67 + 0.02 \times \theta_2$

Table **S14** Fitting formula of exponential type relationship between b and θ_2

Water layer	branch	$\theta_2 < 45°$	$\theta_2 > 45°$
surface layer	left branch	$b = -6.63 \times e^{(-\theta_2/43.44)} + 2.35$	$b = 22.72 \times e^{(-\theta_2/16.88)} - 1.58$
	right branch	$b = 0.45 \times e^{(\theta_2/29.84)} - 2.05$	$b = 10.76 \times e^{(-\theta_2/32.29)} - 2.67$
bottom layer	left branch	$b = -5.07 \times e^{(-\theta_2/24.32)} + 0.80$	$b = 14.47 \times e^{(-\theta_2/18.18)} - 1.22$
	right branch	$b = 3.88 \times e^{(\theta_2/134.86)} - 5.42$	$b = 7.56 \times e^{(-\theta_2/35.48)} - 2.13$

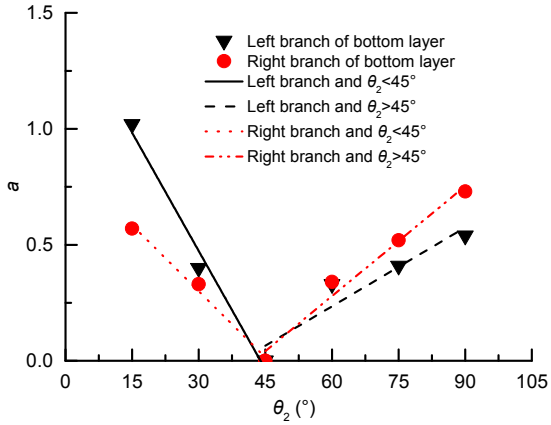

Fig. S15 Relation curve of a and θ_2: bottom layer

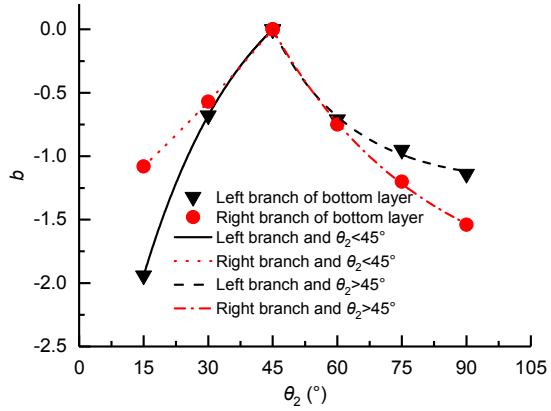

Fig. S16 Relation curve of b and θ_2: bottom layer