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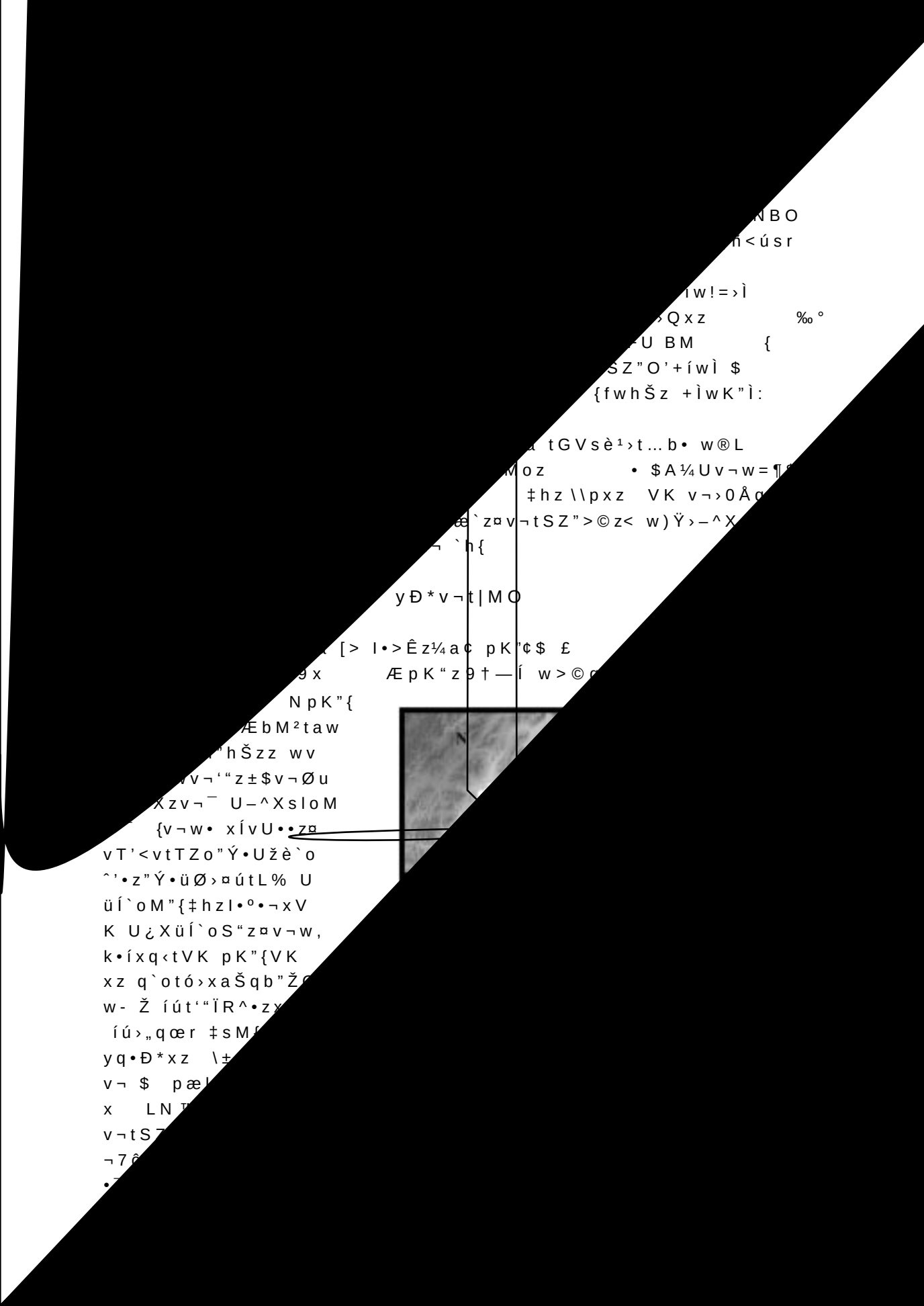
Spatial distribution of SiO_2 flux in Ikuchijima Island, Hiroshima Prefecture.

Toyomitsu SHIGE-EDA*, Shin-ichi ONODERA**, Mitsuyo SAITO**, Koji YOSHIDA**, Tsutomu TAKEI**, Takaki MINE*

*Faculty of Integrated Arts and Sciences, Hiroshima University
**Graduate School of Biosphere Sciences, Hiroshima University

Abstract : To clarify topographic effects on dissolved SiO



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Sampling point	Catchment area(ha)	Longitudinal distance(km)	Catchment altitude(km)	Streambed gradient	Alluvial fan gradient	Mountain land gradient	Alluvial fan area(ha)	Alluvial fan ratio	Prolate degree of catchment	Water convergence degree of catchment
IK1	247.84	3.15	0.40	0.13	0.04	0.24	71.00	0.29	0.25	1.97
IK2	245.00	3.20	0.40	0.13	0.05	0.38	75.42	0.31	0.24	1.91
IK3	54.60	142.	0.22	0.15	0.06	0.44	29.30	0.54	0.27	1.75
IK4	28.08	1.53	0.28	0.18	0.04	0.29	14.02	0.50	0.12	0.66
IK5	266.00	2.75	0.41	0.15	0.06	0.38	98.18	0.37	0.35	2.38
IK6	30.95	1.28	0.22	0.17	0.09	0.46	7.48	0.24	0.19	1.10
IK7	33.06	1.30	0.35	0.27	0.09	0.58	8.39	0.25	0.20	0.73
IK8	44.72	1.34	0.41	0.30	0.12	0.58	20.71	046.	0.25	0.82
IK9	108.50	1.98	0.37	0.19	0.09	0.61	40.10	0.37	0.28	1.48
IK10	39.68	1.38	0.37	0.27	0.12	0.51	23.57	0.59	0.21	0.78
IK11	39.68	1.65	0.39	0.24	0.09	0.55	22.08	0.56	0.15	0.62
IK12	20.03	1.14	0.17	0.15	0.09	0.44	16.33	0.82	0.15	1.03
IK13	52.27	1.31	0.45	0.34	0.19	0.56	18.13	0.35	0.30	0.90
IK14	77.22	1.89	0.45	0.24	0.14	0.38	17.18	0.22	0.22	0.92
IK15	45.33	1.23	0.10	0.08	0.03	0.28	17.31	0.38	0.30	3.70

Catchmentarea流域面積
Catchmentaltitude流域最高標高
Alluvial fan gradient扇状地勾配
Alluvial fan area扇状地面積
Prolatedegree of catchment流域偏長度[***]

Longitudinal distance流下距離[*]
Streambed gradient起伏比[**]
Mountain land gradient山地勾配
Alluvial fan ratio扇状地面積率
Water convergence degree of catchment流域集水度[****]

[*]:流域の河口から最高標高に向かっての谷距離
[**]:流域の平均勾配
[***]:流域形状を表わす指標として提案し用いた
[****]:三次元的集水特性の指標として提案し用いた

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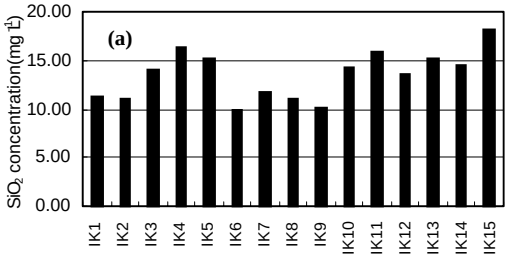

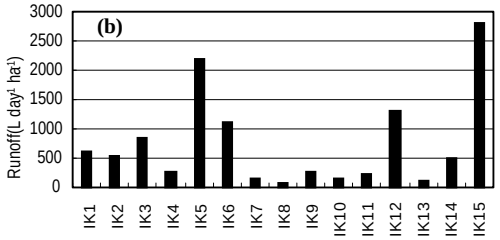

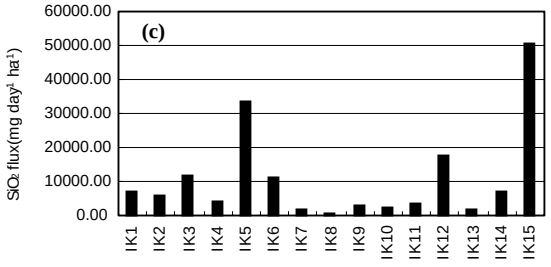

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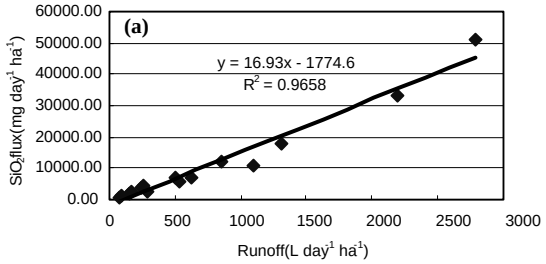

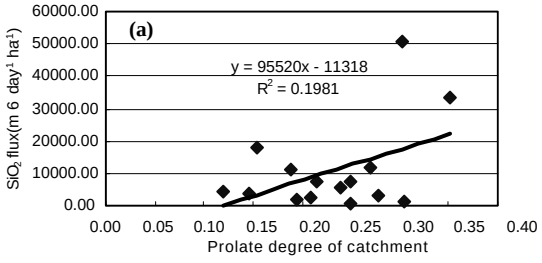

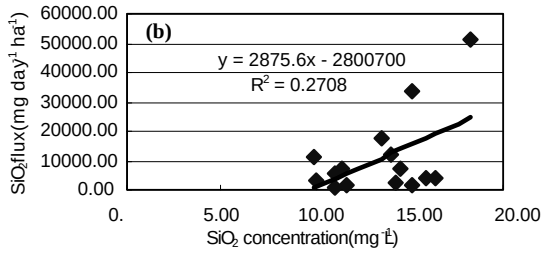

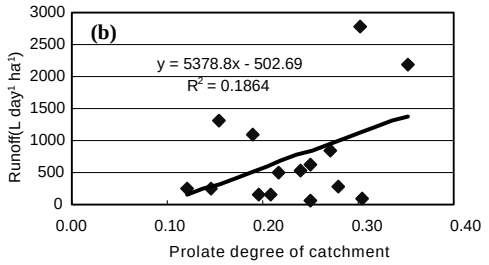

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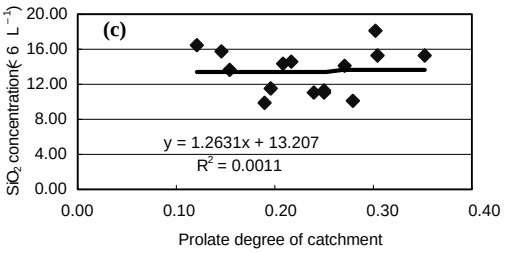

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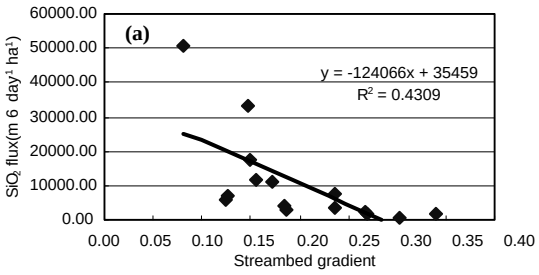
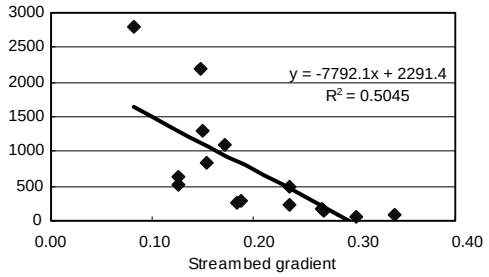
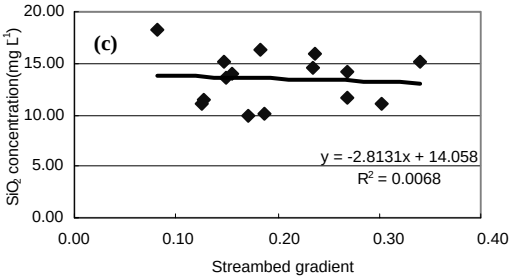

(a)
y = -124066x + 35459
R² = 0.4309
SiO2 flux(m 6 day-1 ha-1)
Streambed gradient


y = -7792.1x + 2291.4
R² = 0.5045
Streambed gradient


(c)
y = -2.8131x + 14.058
R² = 0.0068
SiO2 concentration(mg L-1)
Streambed gradient

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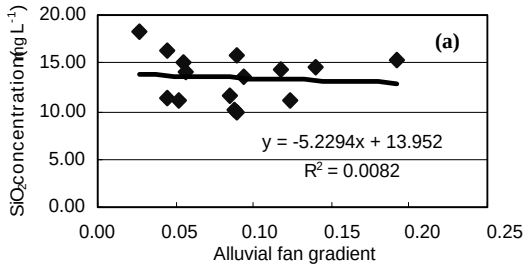

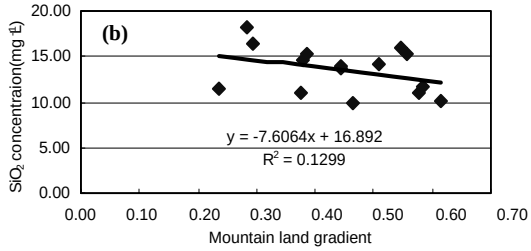

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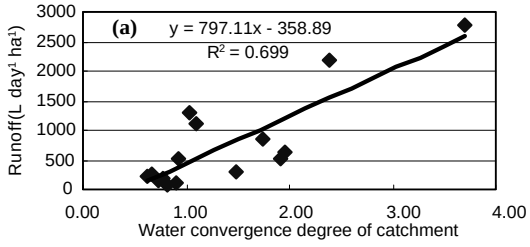

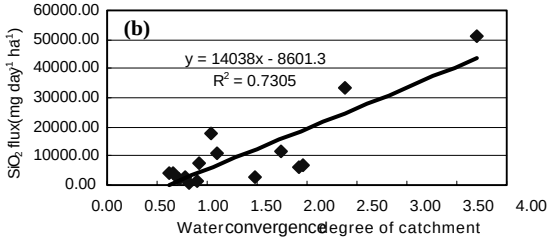

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