

Supplementary Materials

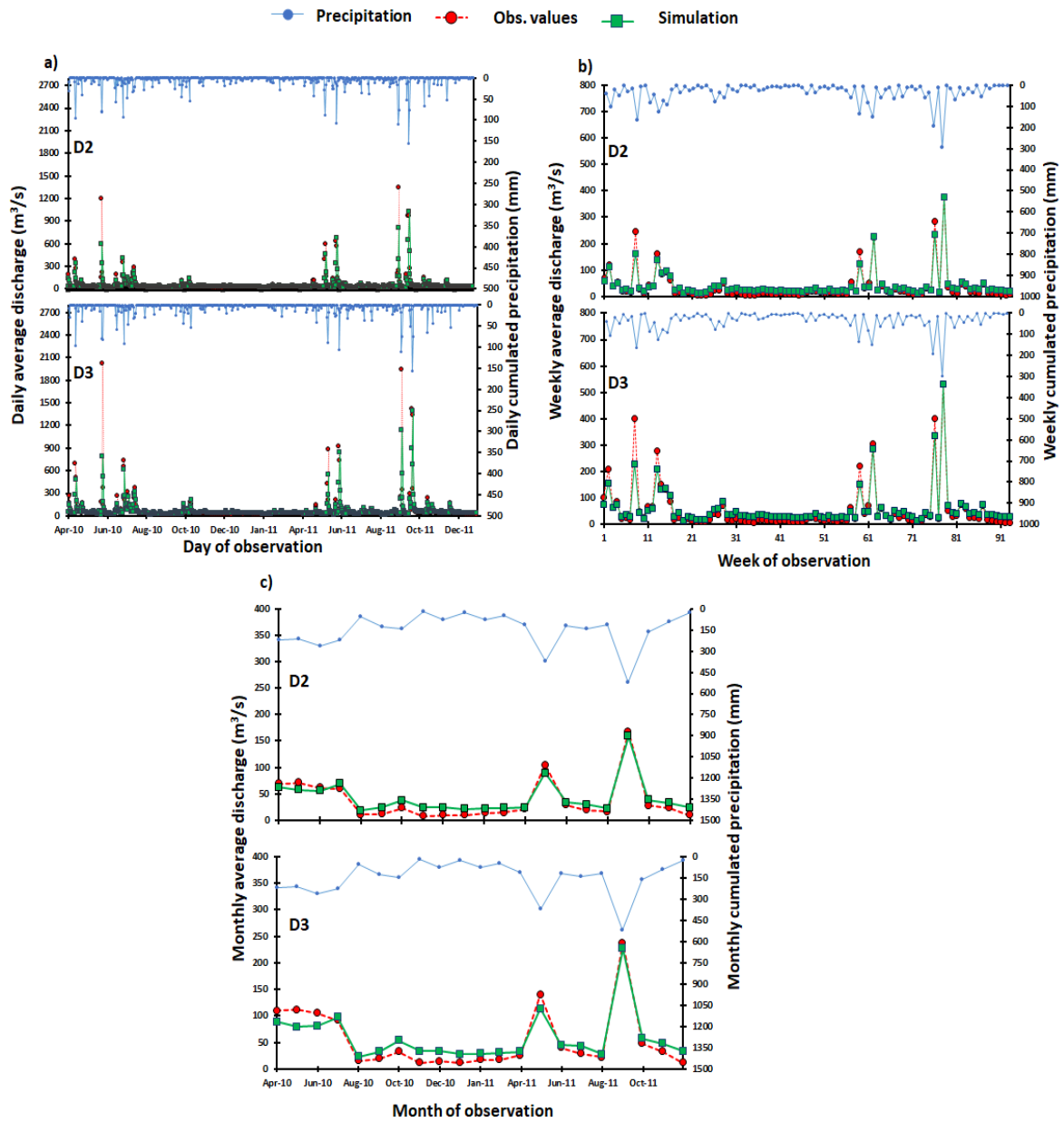


Fig. S1 - Hyeto-hydrograph of daily (a), weekly (b), and monthly (c) average observed and simulated mainstream discharge in stations D2 (central area of the watershed) and D3 (near the estuary) from April 2010 to December 2011. [29]



Fig. S2 – Observed and simulated rose wind chart for the period between March 2010 and February 2011 in the Harima Nada region

Table S1 – Mainstream discharge performance of the Kako River in stations D2 (central area of the watershed) and D3 (near the estuary) at different time resolutions [29]

April 2009 – Dec 2011	R ²	NSE	pBIAS	RSR
D2				
Daily	0.85	0.82	-14.8	0.42
Weekly	0.96	0.94	-15.4	0.25
Monthly	0.97	0.92	-14.7	0.21
D3				
Daily	0.81	0.77	-8.36	0.48
Weekly	0.94	0.91	-8.96	0.30
Monthly	0.94	0.91	-8.34	0.22

Table S2 – Monthly validation of WRF results in different AMeDAS stations of the Harima Nada region for temperature, u-wind, v-wind, wind speed, relative humidity, and atmospheric pressure

Temperature (°C)								
Himeji								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	8.3468	8.5699	0.9426	0.2231	1.0822	1.3719	0.9692
2010/04	720	12.3094	12.5283	0.9495	0.2188	1.0402	1.3215	0.9705
2010/05	744	17.5883	18.339	0.9287	0.7507	1.337	1.7444	0.955
2010/06	720	22.8949	24.1174	0.9311	1.2226	1.4261	1.7324	0.9314
2010/07	744	26.6551	27.7309	0.9092	1.0758	1.2552	1.5987	0.9182
2010/08	744	29.4685	29.8157	0.8925	0.3472	0.99	1.2348	0.9391
2010/09	720	25.414	25.9615	0.9644	0.5475	1.1961	1.5164	0.9701
2010/10	744	18.8435	19.5654	0.9331	0.7219	1.2058	1.5586	0.9566
2010/11	720	11.2768	11.8512	0.9336	0.5744	1.2872	1.6023	0.9539
2010/12	744	6.8011	7.2398	0.9338	0.4387	1.2896	1.6565	0.9634
2011/01	744	2.4086	2.079	0.9102	-0.3296	1.263	1.5051	0.9308
2011/02	672	5.765	6.0041	0.9445	0.2391	1.2406	1.5007	0.9691
all	8760	15.7034	16.2066	0.9887	0.5032	1.2173	1.5361	0.9936
Takamatsu								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.2488	9.9501	0.8936	0.7013	1.3495	1.9723	0.9358
2010/04	720	13.1494	13.6562	0.9315	0.5067	1.1206	1.4717	0.9601
2010/05	744	18.8095	19.8446	0.9281	1.035	1.4891	1.9004	0.944
2010/06	720	23.8833	25.0229	0.9348	1.1396	1.342	1.6581	0.938
2010/07	744	27.7642	29.2392	0.8659	1.475	1.6335	2.0811	0.8705
2010/08	744	30.3792	31.13	0.8962	0.7508	1.0405	1.3688	0.9236
2010/09	720	26.711	27.1101	0.9666	0.3991	0.996	1.263	0.9785

2010/10	744	19.8003	20.4578	0.9464	0.6576	1.0127	1.3162	0.9636
2010/11	720	12.6878	13.1367	0.9002	0.4489	1.2739	1.5893	0.939
2010/12	744	8.3413	8.2317	0.9135	-0.1095	1.3743	1.7064	0.9544
2011/01	744	4.047	3.3722	0.9036	-0.6748	1.0397	1.2967	0.9299
2011/02	672	6.5969	6.8774	0.9377	0.2805	1.1498	1.471	0.9668
all	8760	16.8432	17.3955	0.988	0.5523	1.2364	1.6156	0.9928

Kobe

	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.7935	8.8466	0.9337	-0.947	1.3174	1.6292	0.9487
2010/04	720	13.5051	12.7505	0.9355	-0.7547	1.1681	1.4609	0.9551
2010/05	744	18.5598	17.8812	0.915	-0.6786	1.3902	1.6628	0.9423
2010/06	720	23.6361	23.3448	0.8824	-0.2913	1.1508	1.3912	0.9283
2010/07	744	27.3223	26.5718	0.8558	-0.7505	1.3325	1.5882	0.8984
2010/08	744	29.8207	28.7637	0.8998	-1.057	1.3222	1.5602	0.8726
2010/09	720	26.5965	25.4577	0.9427	-1.1389	1.4629	1.6707	0.9469
2010/10	744	20.514	19.7594	0.9202	-0.7546	1.3846	1.6334	0.9429
2010/11	720	13.5792	12.3953	0.9365	-1.1838	1.355	1.588	0.9261
2010/12	744	9.0038	7.7929	0.965	-1.2108	1.4335	1.6719	0.9591
2011/01	744	4.1958	2.4916	0.9294	-1.7042	1.7254	1.9361	0.8573
2011/02	672	7.5287	6.4665	0.9543	-1.0622	1.3812	1.6278	0.9555
all	8760	17.057	16.0954	0.9898	-0.9616	1.3695	1.6242	0.9917

u- wind (m/s)

Himeji	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	741	0.5012	0.0443	0.7589	-0.4568	1.4306	1.7906	0.8494
2010/04	720	0.1132	-0.1739	0.6868	-0.2871	1.3727	1.7566	0.8218
2010/05	742	0.222	-0.0577	0.6351	-0.2798	1.3464	1.679	0.793
2010/06	718	0.0618	-0.1726	0.5863	-0.2344	1.2395	1.5219	0.7645
2010/07	742	0.2075	0.2575	0.4504	0.0499	1.1851	1.5379	0.6762
2010/08	744	0.211	0.1306	0.4963	-0.0804	1.2042	1.486	0.7014
2010/09	720	0.466	0.1219	0.4938	-0.344	1.416	1.7855	0.7001
2010/10	740	-0.0245	-0.8723	0.5171	-0.8478	1.5113	1.8819	0.6829
2010/11	719	1.1813	0.9349	0.7011	-0.2464	1.1848	1.4901	0.8182
2010/12	743	1.9151	1.8349	0.7846	-0.0801	1.4	1.7517	0.8763
2011/01	743	2.2395	2.4675	0.6603	0.228	1.281	1.6427	0.8068
2011/02	660	0.3205	-0.0763	0.5906	-0.3967	1.1963	1.4902	0.7525
all	8732	0.6228	0.3768	0.6938	-0.246	1.3152	1.6583	0.8248

Takamatsu

	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	727	0.88	0.6672	0.8216	-0.2128	1.3682	1.7772	0.9009
2010/04	710	0.2078	-0.016	0.8666	-0.2238	1.2038	1.5527	0.927

2010/05	737	0.2626	0.4108	0.8077	0.1482	1.2797	1.664	0.8958
2010/06	715	-0.2122	-0.0817	0.6458	0.1306	1.5598	1.9985	0.7913
2010/07	738	0.2118	1.1781	0.5978	0.9663	1.6117	2.0839	0.7239
2010/08	739	-0.4956	0.188	0.731	0.6836	1.5102	1.951	0.8377
2010/09	718	0.7898	0.7575	0.6784	-0.0323	1.3846	1.824	0.8219
2010/10	740	0.2047	-0.6522	0.7559	-0.8569	1.4157	1.7481	0.8266
2010/11	718	1.3812	1.3208	0.8239	-0.0603	0.9924	1.2981	0.9047
2010/12	743	2.1231	2.4109	0.8261	0.2878	1.3592	1.7568	0.9012
2011/01	740	3.1431	3.3137	0.7496	0.1706	1.125	1.5035	0.8618
2011/02	657	0.4805	0.0164	0.7515	-0.4641	1.1174	1.4457	0.8511
all	8682	0.7542	0.8051	0.7893	0.0509	1.3296	1.7346	0.8845

Kobe								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	0.0164	0.6032	0.7998	0.5869	1.8753	2.3688	0.8655
2010/04	719	-0.5121	0.1716	0.7863	0.6837	1.9184	2.4809	0.8478
2010/05	740	0.0869	0.5394	0.7905	0.4525	1.6135	2.084	0.8612
2010/06	719	0.2609	0.715	0.8263	0.4542	1.4809	1.9536	0.8733
2010/07	740	1.7218	1.7215	0.624	-0.0003	1.1269	1.4952	0.7593
2010/08	741	1.2366	1.2913	0.7422	0.0547	1.3378	1.7939	0.809
2010/09	719	0.4576	0.8978	0.7187	0.4402	1.5739	2.0637	0.7994
2010/10	744	-1.8988	-1.1056	0.7269	0.7931	1.8879	2.3453	0.7991
2010/11	719	0.3583	1.0592	0.7983	0.7009	1.621	2.0756	0.8543
2010/12	743	1.8032	2.4281	0.8429	0.625	1.7644	2.359	0.8908
2011/01	743	3.3591	2.9742	0.7291	-0.3849	1.3988	1.764	0.8409
2011/02	670	-0.5571	-0.0735	0.677	0.4837	1.7476	2.1828	0.7805
all	8740	0.5403	0.9456	0.8062	0.4053	1.6109	2.0983	0.8696

v-wind (m/s)

Himeji								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	741	-0.8302	-1.2991	0.7575	-0.4689	1.475	1.9759	0.8543
2010/04	720	-0.4453	-0.7273	0.7365	-0.2821	1.3845	1.8824	0.8491
2010/05	742	0.3024	0.2604	0.7088	-0.042	1.5842	2.1384	0.8359
2010/06	718	0.5721	0.9036	0.5527	0.3315	1.4774	1.9305	0.7445
2010/07	742	1.0656	1.8696	0.6114	0.804	1.5628	1.9772	0.7601
2010/08	744	1.4691	2.1179	0.6353	0.6488	1.5277	1.8971	0.7753
2010/09	720	0.1007	-0.3088	0.757	-0.4095	1.3713	1.875	0.8585
2010/10	740	-1.164	-1.6549	0.4678	-0.4909	1.5441	2.0689	0.6618
2010/11	719	-0.9112	-1.1154	0.5617	-0.2042	1.1717	1.5194	0.7404
2010/12	743	-0.7162	-0.7878	0.512	-0.0715	1.2726	1.665	0.7048
2011/01	743	-0.8911	-1.1773	0.4077	-0.2861	1.0575	1.3622	0.643
2011/02	660	-1.0209	-1.3478	0.6965	-0.327	1.2507	1.6648	0.8239

all	8732	-0.198	-0.2611	0.7115	-0.0631	1.3916	1.8448	0.8365
Takamatsu								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	727	-0.2926	-0.7076	0.4001	-0.415	1.5144	2.0511	0.6402
2010/04	710	-0.3357	-0.5994	0.4478	-0.2638	1.3706	1.846	0.6738
2010/05	737	-0.4813	-0.4843	0.3019	-0.003	1.4314	1.8839	0.5891
2010/06	715	-0.4364	0.232	0.0947	0.6684	1.3133	1.8049	0.4624
2010/07	738	-0.2015	0.5327	0.2086	0.7342	1.3392	1.756	0.4963
2010/08	739	0.2002	1.0286	0.2567	0.8284	1.3988	1.9489	0.5312
2010/09	718	-0.086	-0.4532	0.4528	-0.3672	1.3529	1.8389	0.6754
2010/10	740	-0.0558	-0.8127	0.4463	-0.7568	1.4249	1.8573	0.6501
2010/11	718	0.1254	-0.4869	0.584	-0.6123	1.0907	1.4439	0.7368
2010/12	743	-0.0506	-0.3149	0.4831	-0.2643	1.2077	1.5709	0.6951
2011/01	740	-0.0187	-0.5671	0.5278	-0.5484	1.1417	1.4817	0.6995
2011/02	657	-0.192	-0.722	0.4574	-0.53	1.3175	1.72	0.6636
all	8682	-0.1508	-0.2744	0.3847	-0.1236	1.3254	1.776	0.638
Kobe								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	-0.6561	-2.0078	0.4198	-1.3516	3.022	3.9535	0.6132
2010/04	719	-0.7848	-1.5668	0.5156	-0.782	2.3388	3.0619	0.7107
2010/05	740	-0.2488	-0.3301	0.4656	-0.0813	2.2076	2.9895	0.692
2010/06	719	0.4639	0.7333	0.3857	0.2695	1.7761	2.4213	0.6301
2010/07	740	1.5355	2.0511	0.4066	0.5156	1.5484	2.0958	0.6338
2010/08	741	1.4008	1.8267	0.4948	0.4259	1.3753	1.845	0.6947
2010/09	719	0.3357	-0.5007	0.6842	-0.8363	1.91	2.6075	0.7886
2010/10	744	-1.4301	-2.7201	0.1667	-1.29	2.6875	3.4035	0.4913
2010/11	719	-0.9821	-1.5904	0.4375	-0.6083	1.9248	2.5279	0.6415
2010/12	743	-0.7018	-1.3353	0.2982	-0.6336	1.9835	2.7149	0.554
2011/01	743	-0.5485	-1.7676	0.4678	-1.2191	1.7161	2.1463	0.6232
2011/02	670	-0.8017	-2.1883	0.4205	-1.3867	2.1366	2.9329	0.6127
all	8740	-0.1971	-0.7738	0.5294	-0.5766	2.0526	2.7836	0.7099
Wind speed (m/s)								
Himeji								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	2.8419	3.6499	0.6871	0.808	1.3188	1.7151	0.7949
2010/04	720	2.7949	3.227	0.6036	0.4321	1.1391	1.4588	0.7611
2010/05	743	2.7848	3.1386	0.7061	0.3538	1.0099	1.2889	0.8243
2010/06	720	2.4074	2.3433	0.5334	-0.0641	0.9516	1.2542	0.7361
2010/07	744	2.3832	2.7712	0.6112	0.388	0.9892	1.3116	0.7687
2010/08	744	2.7324	2.8144	0.6706	0.082	0.9262	1.1686	0.8144
2010/09	720	2.6092	2.8953	0.5893	0.2862	1.0562	1.4196	0.7567

2010/10	744	2.2418	3.0541	0.4572	0.8123	1.2532	1.6142	0.6366
2010/11	720	2.239	2.666	0.681	0.427	0.9421	1.2244	0.8049
2010/12	744	2.928	3.3964	0.7002	0.4684	1.2028	1.5356	0.8214
2011/01	744	2.8497	3.193	0.6667	0.3433	1.0868	1.418	0.8083
2011/02	668	2.3102	2.6451	0.6065	0.335	1.0416	1.3404	0.7711
all	8755	2.5969	2.988	0.6391	0.3911	1.0774	1.4058	0.7869

Takamatsu

	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	2.6665	3.2928	0.7036	0.6262	1.1762	1.5725	0.8125
2010/04	720	2.6674	3.1557	0.7824	0.4883	0.9915	1.2828	0.8669
2010/05	744	2.507	2.8708	0.7119	0.3638	1.0021	1.2786	0.8312
2010/06	720	2.1117	2.4843	0.5225	0.3727	1.0352	1.3206	0.7098
2010/07	744	1.9203	2.4797	0.3386	0.5594	1.1874	1.5622	0.5717
2010/08	744	2.3808	2.7733	0.6158	0.3925	1.0816	1.3721	0.777
2010/09	720	2.4017	2.7718	0.67	0.3701	0.9372	1.2107	0.8039
2010/10	744	2.0728	2.778	0.5382	0.7051	1.1066	1.4147	0.6875
2010/11	720	2.3269	2.4933	0.7906	0.1664	0.8472	1.1158	0.8839
2010/12	744	3.1327	3.5609	0.7672	0.4282	1.1527	1.5289	0.8642
2011/01	743	3.5651	3.7214	0.7499	0.1562	1.0239	1.3697	0.8625
2011/02	672	2.0048	2.3091	0.6681	0.3043	0.8715	1.1416	0.8049
all	8759	2.4847	2.8974	0.7045	0.4127	1.0367	1.3584	0.8255

Kobe

	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.0231	4.6756	0.3388	0.6525	2.1161	2.872	0.6093
2010/04	720	4.131	3.9837	0.4466	-0.1473	1.8326	2.4008	0.663
2010/05	744	3.6216	3.4991	0.6228	-0.1225	1.401	1.8684	0.7639
2010/06	720	3.5256	2.8848	0.5369	-0.6408	1.417	1.8341	0.7067
2010/07	744	3.063	3.1721	0.544	0.1091	1.127	1.5565	0.7334
2010/08	744	3.3804	2.9189	0.5543	-0.4615	1.1293	1.4916	0.7352
2010/09	720	3.5329	3.5506	0.3269	0.0177	1.5149	2.0194	0.5984
2010/10	744	3.9798	4.0444	0.2498	0.0645	2.0455	2.6208	0.5266
2010/11	720	3.3817	3.5158	0.4103	0.1342	1.575	2.0084	0.6572
2010/12	744	4.3644	4.4177	0.5168	0.0533	1.6048	2.1746	0.7256
2011/01	744	4.2134	3.952	0.5967	-0.2614	1.2998	1.632	0.7648
2011/02	672	3.2147	3.4175	0.2908	0.2028	1.6904	2.2677	0.5697
all	8760	3.7073	3.6735	0.4556	-0.0339	1.5615	2.101	0.6827

Specific humidity (g/kg)

Himeji								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.7826	4.6203	0.936	-0.1623	0.4919	0.6678	0.9643
2010/04	720	5.8671	5.4754	0.9321	-0.3917	0.6659	0.9021	0.9571

2010/05	744	8.5431	7.8628	0.8329	-0.6802	1.0712	1.6503	0.8972
2010/06	720	12.8831	12.3314	0.9394	-0.5517	1.0601	1.37	0.9625
2010/07	744	17.2731	16.4412	0.6227	-0.8319	1.2005	1.5317	0.7079
2010/08	744	18.3117	17.8168	0.6399	-0.4949	0.9097	1.1676	0.7746
2010/09	720	14.3522	13.5657	0.9514	-0.7865	1.0414	1.3476	0.961
2010/10	744	9.691	9.1552	0.8881	-0.5358	0.8819	1.1451	0.9262
2010/11	720	5.6815	5.2846	0.8486	-0.3969	0.6259	0.8724	0.9016
2010/12	744	4.3615	4.2695	0.9237	-0.092	0.4478	0.643	0.9596
2011/01	744	2.8005	2.8732	0.7896	0.0727	0.2688	0.3409	0.882
2011/02	672	3.8678	3.8325	0.9333	-0.0353	0.3851	0.5001	0.9634
all	8760	9.0698	8.6609	0.9836	-0.4089	0.7562	1.0921	0.9902
Takamatsu								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.7738	4.7667	0.9159	-0.0071	0.5605	0.7791	0.9533
2010/04	720	5.9161	5.7526	0.919	-0.1635	0.6675	0.9017	0.9555
2010/05	744	8.1416	7.7419	0.898	-0.3996	0.9108	1.251	0.9406
2010/06	720	13.0668	12.3792	0.9451	-0.6876	1.0185	1.3342	0.9614
2010/07	744	17.0436	15.7563	0.4553	-1.2873	1.5468	1.8943	0.5459
2010/08	744	18.0229	16.9471	0.5537	-1.0758	1.3601	1.6389	0.661
2010/09	720	14.1771	13.3944	0.9241	-0.7827	1.1044	1.4536	0.9456
2010/10	744	9.9915	9.6485	0.9099	-0.343	0.8264	1.0633	0.9484
2010/11	720	5.8834	5.5356	0.8923	-0.3477	0.6266	0.8234	0.919
2010/12	744	4.4589	4.4832	0.9319	0.0244	0.465	0.626	0.9645
2011/01	744	2.7039	2.8816	0.8467	0.1777	0.3136	0.3766	0.8922
2011/02	672	3.9445	4.0556	0.9188	0.1111	0.4161	0.538	0.9545
all	8760	9.0437	8.6422	0.9822	-0.4016	0.8209	1.1504	0.9883
Kobe								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	5.2708	4.8358	0.9289	-0.435	0.6911	0.8557	0.9515
2010/04	720	6.3444	5.6262	0.9388	-0.7182	0.8398	1.0785	0.9445
2010/05	744	9.1595	8.1895	0.8575	-0.97	1.2466	1.6928	0.8941
2010/06	720	13.6124	12.5861	0.9449	-1.0263	1.2123	1.5748	0.9461
2010/07	744	17.8802	16.8076	0.6613	-1.0727	1.269	1.6066	0.6986
2010/08	744	19.2127	18.0353	0.7144	-1.1774	1.3081	1.6027	0.7302
2010/09	720	15.2285	14.1666	0.9527	-1.0619	1.2506	1.578	0.9568
2010/10	744	10.0413	9.2558	0.8886	-0.7855	1.0006	1.2982	0.912
2010/11	720	6.0613	5.4738	0.8486	-0.5875	0.7833	1.0233	0.8871
2010/12	744	4.6729	4.4369	0.9272	-0.236	0.5069	0.7068	0.958
2011/01	744	2.9831	2.9112	0.8162	-0.0719	0.2564	0.3432	0.8981
2011/02	672	4.1578	3.9095	0.9332	-0.2483	0.4388	0.5796	0.9582
all	8760	9.5881	8.8868	0.9848	-0.7013	0.9028	1.2468	0.9879

Atmospheric Pressure (hPa)								
Himeji								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	1013.86	1010.973	0.9956	-2.8871	2.8871	2.9572	0.9544
2010/04	720	1013.062	1010.319	0.9955	-2.7429	2.7428	2.7964	0.9433
2010/05	744	1007.465	1004.629	0.9965	-2.8356	2.8356	2.8763	0.9406
2010/06	720	1006.462	1003.474	0.9949	-2.988	2.988	3.0206	0.8893
2010/07	744	1005.815	1002.699	0.9978	-3.1165	3.1164	3.1442	0.9405
2010/08	744	1008.994	1005.97	0.9972	-3.024	3.024	3.0378	0.8692
2010/09	720	1008.396	1005.54	0.9922	-2.8566	2.8566	2.8862	0.8411
2010/10	744	1011.749	1008.927	0.9943	-2.8226	2.8225	2.868	0.9164
2010/11	720	1014.387	1011.758	0.9927	-2.6288	2.6289	2.6819	0.9151
2010/12	744	1008.636	1006.006	0.9944	-2.6306	2.6305	2.6974	0.9458
2011/01	744	1014.459	1012.049	0.9918	-2.4108	2.4107	2.4839	0.9337
2011/02	672	1014.799	1012.025	0.9953	-2.7744	2.7744	2.8284	0.9418
all	8760	1010.641	1007.831	0.9961	-2.8102	2.8102	2.8621	0.9484
Takamatsu								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	1017.23	1017.256	0.9956	0.0257	0.489	0.6322	0.9978
2010/04	720	1016.154	1016.155	0.995	0.001	0.4322	0.5761	0.9975
2010/05	744	1010.366	1010.294	0.9958	-0.0724	0.38	0.5411	0.9978
2010/06	720	1009.205	1008.942	0.9933	-0.2635	0.422	0.5624	0.9954
2010/07	744	1008.554	1008.103	0.9974	-0.4506	0.5017	0.628	0.9974
2010/08	744	1011.456	1011.165	0.9947	-0.2914	0.3945	0.4835	0.9958
2010/09	720	1011.378	1011.3	0.9926	-0.078	0.3082	0.3935	0.9961
2010/10	744	1014.852	1014.823	0.995	-0.0289	0.3622	0.4722	0.9975
2010/11	720	1017.726	1018.03	0.993	0.3047	0.4448	0.5882	0.9952
2010/12	744	1012.234	1012.647	0.9907	0.4133	0.6315	0.8345	0.9938
2011/01	744	1018.487	1019.155	0.9938	0.6673	0.7138	0.8365	0.9915
2011/02	672	1018.129	1018.279	0.9955	0.1498	0.435	0.5558	0.9976
all	8760	1013.781	1013.812	0.9956	0.0309	0.4604	0.6065	0.9976
Kobe								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	1014.8	1005.885	0.9952	-8.9149	8.9148	8.9413	0.7215
2010/04	720	1014.129	1005.367	0.9943	-8.7621	8.7621	8.7838	0.6662
2010/05	744	1008.675	1000.029	0.9962	-8.6465	8.6465	8.6608	0.6607
2010/06	720	1007.688	999.0294	0.9949	-8.6588	8.6588	8.6692	0.5703
2010/07	744	1007.116	998.4913	0.9977	-8.6242	8.6242	8.6348	0.7082
2010/08	744	1010.244	1001.683	0.997	-8.5613	8.5613	8.5664	0.5364
2010/09	720	1009.4	1000.868	0.9906	-8.5315	8.5315	8.5439	0.4697
2010/10	744	1012.566	1003.961	0.9933	-8.6049	8.6048	8.6222	0.6091

2010/11	720	1015.303	1006.731	0.9904	-8.5717	8.5717	8.5936	0.593
2010/12	744	1009.527	1000.996	0.9944	-8.5316	8.5316	8.5533	0.6725
2011/01	744	1015.309	1006.782	0.9931	-8.5278	8.5278	8.546	0.6097
2011/02	672	1015.749	1006.845	0.9943	-8.9038	8.9038	8.9249	0.6698
all	8760	1011.677	1003.025	0.9959	-8.6514	8.6514	8.6692	0.6894

Table S3 – Monthly validation of WRF results in different AMeDAS stations of the domain for temperature, wind speed, and relative humidity

Temperature (°C)								
Fukuoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	10.8407	11.1955	0.9301	0.3548	1.157	1.5792	0.9596
2010/04	720	13.7851	14.456	0.9312	0.6709	1.2314	1.615	0.9481
2010/05	744	19.2297	20.2961	0.9081	1.0664	1.3965	1.9428	0.9261
2010/06	720	23.49	25.2251	0.8545	1.7351	1.9122	2.3202	0.8319
2010/07	744	27.6606	29.0387	0.8894	1.3781	1.5189	1.8938	0.8851
2010/08	744	30.3095	31.4481	0.866	1.1386	1.3517	1.7549	0.881
2010/09	720	26.3061	27.1081	0.9518	0.802	1.1819	1.5254	0.9629
2010/10	744	20.0118	20.5822	0.9387	0.5703	1.0866	1.3577	0.9598
2010/11	720	13.1989	13.7889	0.8954	0.59	1.1689	1.5297	0.9363
2010/12	744	8.7493	9.0553	0.9406	0.306	1.082	1.3632	0.9679
2011/01	744	3.7753	3.9477	0.8404	0.1724	0.8888	1.142	0.9134
2011/02	672	8.1749	8.4734	0.9468	0.2985	1.0151	1.3576	0.9696
all	8760	17.1786	17.9372	0.9884	0.7586	1.2498	1.6448	0.9918
Hiroshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.0634	9.0106	0.9046	-0.0529	1.2827	1.6561	0.9501
2010/04	720	13.0058	13.0793	0.9329	0.0735	1.111	1.4062	0.9652
2010/05	744	18.47	18.542	0.9132	0.072	1.2438	1.5439	0.9546
2010/06	720	23.3139	23.5128	0.8841	0.1989	1.1214	1.3987	0.9367
2010/07	744	27.2352	26.8445	0.8489	-0.3907	1.2106	1.479	0.9119
2010/08	744	30.3329	29.1122	0.9146	-1.2207	1.3922	1.6018	0.9014
2010/09	720	26.1672	25.4344	0.9617	-0.7328	1.1717	1.4101	0.9687
2010/10	744	19.2515	19.2382	0.9478	-0.0133	0.9804	1.26	0.9731
2010/11	720	11.9494	11.9816	0.9156	0.0321	1.1961	1.4732	0.9541
2010/12	744	7.3008	7.1945	0.9199	-0.1063	1.3194	1.6385	0.9579
2011/01	744	2.8687	2.2801	0.9099	-0.5885	1.133	1.4012	0.9325
2011/02	672	6.6167	6.4204	0.9386	-0.1963	1.1522	1.4301	0.9679
all	8760	16.3522	16.1066	0.988	-0.2456	1.1937	1.4801	0.9937

Kagoshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.9921	9.852	0.9339	-0.1401	1.1793	1.4901	0.963
2010/04	720	13.4388	13.4935	0.9354	0.0547	1.1084	1.3984	0.9648
2010/05	744	18.691	18.3638	0.906	-0.3272	1.2865	1.6023	0.9474
2010/06	720	23.4257	23.5542	0.9086	0.1285	1.0455	1.2878	0.9484
2010/07	744	27.1165	26.7843	0.8597	-0.3322	1.079	1.3254	0.916
2010/08	744	29.4478	28.7312	0.874	-0.7166	1.0984	1.2964	0.9053
2010/09	720	26.2022	25.6661	0.9529	-0.5361	1.2148	1.4346	0.9605
2010/10	744	19.6843	20.3608	0.9137	0.6765	1.2147	1.5726	0.9455
2010/11	720	13.0482	13.1609	0.8721	0.1127	1.2825	1.6089	0.9296
2010/12	744	9.0574	8.9053	0.8947	-0.1521	1.4878	1.8427	0.9439
2011/01	744	4.2582	3.8152	0.8279	-0.443	1.1502	1.3921	0.8953
2011/02	672	7.1874	7.232	0.946	0.0446	1.0644	1.3756	0.9723
all	8760	16.8503	16.7121	0.986	-0.1382	1.1855	1.4784	0.9928
Kochi								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	11.4407	11.4875	0.9154	0.0467	1.3174	1.6049	0.9559
2010/04	720	14.7792	14.7544	0.9101	-0.0247	1.2365	1.5494	0.9512
2010/05	744	19.3755	19.616	0.8535	0.2404	1.4614	1.8183	0.9138
2010/06	720	23.2818	23.7735	0.9151	0.4917	1.1254	1.4	0.9345
2010/07	744	27.0065	27.1375	0.8544	0.131	0.9386	1.1905	0.9108
2010/08	744	29.0664	28.8437	0.8652	-0.2227	1.0638	1.2392	0.9016
2010/09	720	26.425	26.3749	0.9189	-0.0501	1.2105	1.4472	0.954
2010/10	744	20.6676	21.0016	0.8789	0.334	1.3692	1.6617	0.9341
2010/11	720	13.5071	14.0022	0.8978	0.4952	1.4875	1.7643	0.9356
2010/12	744	8.7152	9.0489	0.9212	0.3337	1.5575	1.8827	0.9576
2011/01	744	4.2507	3.8262	0.933	-0.4244	1.2851	1.5209	0.9463
2011/02	672	8.9092	8.6604	0.9338	-0.2489	1.4243	1.6966	0.9619
all	8760	17.33	17.4231	0.9833	0.0931	1.2889	1.5778	0.9915
Nagoya								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.084	10.402	0.9424	1.318	1.4387	1.8232	0.9386
2010/04	720	13.2939	14.4682	0.9412	1.1743	1.3988	1.7824	0.9483
2010/05	744	18.6645	20.1528	0.9692	1.4883	1.5413	1.8177	0.9533
2010/06	720	23.9228	25.8141	0.9599	1.8913	1.9157	2.1393	0.9134
2010/07	744	27.8321	29.9264	0.9492	2.0943	2.1107	2.3658	0.8932
2010/08	744	29.3614	31.3064	0.9362	1.945	1.9845	2.1891	0.859
2010/09	720	26.0636	27.8868	0.9759	1.8232	1.8465	2.0923	0.9473
2010/10	744	19.4146	21.2389	0.9546	1.8242	1.8971	2.1421	0.9211
2010/11	720	12.0426	13.2416	0.9484	1.199	1.3723	1.5957	0.9409

2010/12	744	7.8526	8.3459	0.9621	0.4933	0.9677	1.2519	0.977
2011/01	744	2.7742	2.4667	0.9196	-0.3075	0.86	1.1162	0.9551
2011/02	672	6.6037	6.7166	0.9372	0.1129	1.1841	1.5109	0.966
all	8760	16.4632	17.7244	0.9924	1.2611	1.5451	1.8589	0.9909
Nobeoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	11.1802	11.078	0.9123	-0.1022	1.4633	1.8332	0.9544
2010/04	720	14.1997	14.5013	0.9196	0.3016	1.3277	1.6575	0.9565
2010/05	744	18.8647	19.6277	0.8637	0.7631	1.6403	2.087	0.9083
2010/06	720	22.1306	23.4752	0.8965	1.3446	1.6	1.9866	0.905
2010/07	744	26.2079	27.4129	0.8612	1.205	1.4334	1.7581	0.8714
2010/08	744	27.9157	28.3856	0.7834	0.4699	1.3795	1.7083	0.8704
2010/09	720	25.2125	25.7847	0.9127	0.5722	1.3151	1.6036	0.9477
2010/10	744	19.5001	19.7307	0.861	0.2306	1.4987	1.8355	0.9248
2010/11	720	12.7678	13.4319	0.8951	0.6641	1.6435	1.9914	0.9253
2010/12	744	8.653	8.718	0.9116	0.065	1.5638	1.9349	0.9541
2011/01	744	4.1817	3.518	0.9215	-0.6637	1.2439	1.497	0.9477
2011/02	672	8.654	8.7563	0.9047	0.1023	1.6485	1.9551	0.9482
all	8759	16.667	17.0789	0.9786	0.4119	1.4785	1.8278	0.9883
Totori								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	7.9973	8.1835	0.9437	0.1862	1.1548	1.5012	0.9635
2010/04	720	11.6389	12.1506	0.93	0.5117	1.4701	1.9453	0.9435
2010/05	744	17.0681	17.982	0.9148	0.9138	1.5707	2.1341	0.9423
2010/06	720	22.1056	23.4691	0.9009	1.3636	1.8012	2.2867	0.8945
2010/07	744	26.728	27.4627	0.9156	0.7347	1.2393	1.532	0.9331
2010/08	744	29.8306	30.0057	0.838	0.175	1.3938	1.7123	0.8988
2010/09	720	24.6797	25.438	0.953	0.7583	1.4713	1.7661	0.9597
2010/10	744	17.7598	18.7874	0.9266	1.0276	1.5079	1.8573	0.9363
2010/11	720	11.1808	12.0754	0.8957	0.8946	1.6578	1.9923	0.9158
2010/12	744	7.104	7.3314	0.8972	0.2274	1.6371	1.9572	0.9453
2011/01	744	1.5379	1.4271	0.6395	-0.1108	1.3444	1.7936	0.7957
2011/02	672	5.0402	5.529	0.8851	0.4888	1.5986	2.0602	0.9351
all	8760	15.2824	15.8778	0.9828	0.5954	1.4851	1.8887	0.9904
Wakayama								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	9.9921	9.852	0.9339	-0.1401	1.1793	1.4901	0.963
2010/04	720	13.4388	13.4935	0.9354	0.0547	1.1084	1.3984	0.9648
2010/05	744	18.691	18.3638	0.906	-0.3272	1.2865	1.6023	0.9474
2010/06	720	23.4257	23.5542	0.9086	0.1285	1.0455	1.2878	0.9484
2010/07	744	27.1165	26.7843	0.8597	-0.3322	1.079	1.3254	0.916

2010/08	744	29.4478	28.7312	0.874	-0.7166	1.0984	1.2964	0.9053
2010/09	720	26.2022	25.6661	0.9529	-0.5361	1.2148	1.4346	0.9605
2010/10	744	19.6843	20.3608	0.9137	0.6765	1.2147	1.5726	0.9455
2010/11	720	13.0482	13.1609	0.8721	0.1127	1.2825	1.6089	0.9296
2010/12	744	9.0574	8.9053	0.8947	-0.1521	1.4878	1.8427	0.9439
2011/01	744	4.2582	3.8152	0.8279	-0.443	1.1502	1.3921	0.8953
2011/02	672	7.1874	7.232	0.946	0.0446	1.0644	1.3756	0.9723
all	8760	16.8503	16.7121	0.986	-0.1382	1.1855	1.4784	0.9928

Wind Speed (m/s)

Fukuoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	3.5372	3.8966	0.691	0.3593	1.2247	1.5719	0.8193
2010/04	720	3.1307	3.4932	0.7519	0.3625	1.0796	1.4125	0.8571
2010/05	744	2.9976	3.1499	0.7608	0.1523	0.9962	1.2868	0.8664
2010/06	720	2.3182	2.5981	0.5356	0.2799	1.0085	1.3093	0.7275
2010/07	744	2.5168	2.6898	0.5693	0.173	1.0119	1.3219	0.7546
2010/08	744	2.8968	3.0274	0.6078	0.1306	1.1103	1.4354	0.7829
2010/09	720	2.8299	3.1812	0.698	0.3514	1.0811	1.4196	0.8249
2010/10	744	2.6901	3.0978	0.743	0.4078	1.0354	1.3156	0.8468
2010/11	720	2.5117	2.6942	0.7639	0.1825	0.8656	1.1663	0.8688
2010/12	744	3.3001	3.932	0.7695	0.6319	1.256	1.654	0.8542
2011/01	744	3.1616	4.0465	0.7968	0.885	1.2646	1.6154	0.8498
2011/02	671	2.7508	2.8448	0.8187	0.094	0.9175	1.1975	0.8993
all	8759	2.89	3.2266	0.7321	0.3366	1.0729	1.4026	0.8465

Hiroshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	3.8493	3.1181	0.5234	-0.7312	1.6309	2.0465	0.6979
2010/04	720	3.6426	2.8964	0.5229	-0.7462	1.5538	1.9535	0.6865
2010/05	744	3.4406	2.8494	0.3003	-0.5911	1.6493	2.0957	0.5807
2010/06	720	2.9443	2.3652	0.2105	-0.5791	1.3412	1.7803	0.5368
2010/07	743	2.9027	2.8174	0.5239	-0.0853	1.1192	1.4673	0.7273
2010/08	744	3.2078	2.7909	0.624	-0.4169	1.106	1.3712	0.7691
2010/09	719	3.8127	3.032	0.6266	-0.7806	1.3151	1.6475	0.7355
2010/10	744	3.9327	2.7737	0.5678	-1.159	1.5298	1.9047	0.6728
2010/11	720	3.9799	2.4662	0.3382	-1.5137	2.019	2.4715	0.5569
2010/12	744	3.7672	2.7049	0.3315	-1.0623	1.9484	2.4314	0.5829
2011/01	744	2.9824	2.5471	0.1855	-0.4353	1.5846	1.9556	0.5129
2011/02	672	3.7266	2.4838	0.5618	-1.2428	1.6238	2.0626	0.6838
all	8758	3.5132	2.7396	0.4411	-0.7735	1.5342	1.9576	0.6487

Kagoshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	3.3903	3.5056	0.7054	0.1153	1.2172	1.5358	0.8367
2010/04	720	3.3472	3.468	0.5378	0.1208	1.2451	1.5907	0.7346
2010/05	744	3.0698	3.1034	0.5555	0.0337	1.1693	1.4747	0.7467
2010/06	720	3.026	3.0925	0.4983	0.0665	1.2436	1.614	0.692
2010/07	744	2.7789	3.0595	0.6517	0.2806	1.0232	1.2688	0.7916
2010/08	744	3.3757	3.5701	0.716	0.1944	1.0344	1.317	0.8422
2010/09	720	3.0989	3.079	0.6984	-0.0199	1.067	1.3319	0.8303
2010/10	744	3.345	3.1103	0.5854	-0.2347	1.2244	1.551	0.7569
2010/11	720	3.1121	2.587	0.5044	-0.525	1.1677	1.4398	0.6954
2010/12	732	3.4148	3.1773	0.6175	-0.2375	1.3168	1.7058	0.7816
2011/01	739	3.5277	3.1158	0.6185	-0.412	1.2383	1.5657	0.7727
2011/02	671	3.1861	2.6896	0.4284	-0.4966	1.3929	1.6964	0.6486
all	8741	3.2234	3.1342	0.5986	-0.0892	1.1933	1.5122	0.7728
Kochi								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	1.7458	3.3087	0.3014	1.5629	1.8818	2.7716	0.4118
2010/04	720	1.7992	3.1324	0.4135	1.3333	1.6177	2.3522	0.4827
2010/05	744	1.745	2.5454	0.442	0.8004	1.1804	1.6575	0.5374
2010/06	720	1.6276	2.2762	0.3937	0.6486	1.0538	1.4744	0.5505
2010/07	744	1.5313	2.2509	0.3878	0.7196	1.0451	1.5047	0.5039
2010/08	744	1.7329	2.3519	0.4501	0.619	0.9693	1.2617	0.5982
2010/09	720	1.7706	2.5868	0.3918	0.8163	1.3256	1.9835	0.4754
2010/10	744	1.603	3.0069	0.3502	1.4039	1.704	2.381	0.3986
2010/11	720	1.7121	2.5043	0.3414	0.7922	1.2273	1.7504	0.4738
2010/12	743	1.7734	2.722	0.3964	0.9487	1.3304	1.9844	0.5108
2011/01	744	1.7337	2.6592	0.5122	0.9254	1.2777	1.667	0.6174
2011/02	672	1.6071	2.7419	0.4109	1.1347	1.3687	1.848	0.5018
all	8759	1.6989	2.6739	0.388	0.975	1.3318	1.9328	0.4929
Nagoya								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	3.2637	3.4462	0.7512	0.1825	1.0949	1.4318	0.8607
2010/04	720	3.4068	3.5777	0.7673	0.1709	1.0217	1.3428	0.8727
2010/05	744	3.4784	3.6268	0.7988	0.1485	0.9406	1.2326	0.8911
2010/06	720	2.5772	2.7291	0.6691	0.1519	0.8843	1.1336	0.8139
2010/07	744	2.704	2.9769	0.6575	0.2729	0.9138	1.184	0.8025
2010/08	744	2.7034	2.7451	0.6531	0.0417	0.8153	1.0985	0.8094
2010/09	720	2.726	2.8959	0.6992	0.1699	0.8682	1.1065	0.8291
2010/10	744	2.387	2.6603	0.697	0.2733	0.9311	1.1863	0.8242
2010/11	720	2.5987	2.7954	0.7668	0.1967	0.9002	1.1707	0.8712

2010/12	744	2.9187	3.2437	0.7016	0.325	1.1691	1.5519	0.8265
2011/01	744	3.1694	3.4788	0.6558	0.3095	1.1112	1.462	0.8015
2011/02	672	2.9153	2.7707	0.8222	-0.1446	0.8877	1.1479	0.9035
all	8759	2.9047	3.0822	0.7383	0.1775	0.9626	1.2643	0.8551
Nobeoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	742	3.0655	3.728	0.4828	0.6625	1.7965	2.4113	0.6825
2010/04	720	2.7399	3.2265	0.4768	0.4866	1.5487	2.0328	0.6843
2010/05	744	2.3031	2.9369	0.425	0.6338	1.2374	1.6669	0.6505
2010/06	720	1.8507	2.6761	0.3954	0.8254	1.353	1.738	0.6047
2010/07	744	1.6634	2.56	0.2051	0.8966	1.3276	1.74	0.4778
2010/08	744	2.3656	2.9792	0.5058	0.6136	1.1048	1.4368	0.6895
2010/09	720	2.331	3.0192	0.6115	0.6883	1.2203	1.6639	0.7369
2010/10	744	2.7371	3.4616	0.6602	0.7245	1.4228	1.8569	0.7935
2010/11	720	2.7144	2.5688	0.3058	-0.1457	1.3782	1.877	0.5857
2010/12	744	3.4449	2.661	0.2991	-0.7839	1.7642	2.3946	0.56
2011/01	744	3.5163	2.8056	0.5135	-0.7106	1.6276	2.1909	0.6703
2011/02	672	2.7967	3.1399	0.5789	0.3431	1.292	1.6638	0.7558
all	8758	2.6283	2.9799	0.4539	0.3516	1.4243	1.9149	0.6772
Totori								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	742	3.6704	4.5191	0.7079	0.8487	1.5521	1.9922	0.8146
2010/04	720	3.2003	3.9325	0.649	0.7322	1.3391	1.767	0.776
2010/05	744	3.234	3.5923	0.6475	0.3583	1.2429	1.6	0.7945
2010/06	719	2.4922	2.2573	0.3796	-0.2349	1.1229	1.4137	0.6256
2010/07	744	2.6758	2.5773	0.538	-0.0985	1.0933	1.4013	0.7357
2010/08	744	3.246	3.2163	0.6489	-0.0297	1.0753	1.3825	0.8
2010/09	719	2.8243	3.1676	0.6188	0.3432	1.1267	1.4717	0.7733
2010/10	744	2.3755	2.9895	0.6092	0.6139	1.2193	1.6298	0.7435
2010/11	719	2.9229	3.4769	0.5649	0.5539	1.2775	1.7033	0.7327
2010/12	744	3.4739	4.1475	0.5758	0.6736	1.4823	1.9204	0.7413
2011/01	744	2.8741	3.7583	0.5138	0.8843	1.5226	1.9977	0.6794
2011/02	672	2.7808	3.4497	0.6045	0.6689	1.2701	1.6721	0.7428
all	8755	2.9837	3.4257	0.6172	0.442	1.2777	1.6772	0.7714
Wakayama								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.4499	4.8283	0.7215	0.3784	1.4471	1.8335	0.842
2010/04	720	3.8989	4.0614	0.6483	0.1626	1.3654	1.7868	0.7972
2010/05	744	3.9958	3.9678	0.6557	-0.028	1.276	1.7088	0.8048
2010/06	720	3.5344	3.3673	0.6798	-0.1671	1.2473	1.6835	0.8185
2010/07	744	3.8728	4.0833	0.7233	0.2104	1.433	1.8399	0.8382

2010/08	744	3.7638	3.6748	0.6936	-0.0891	1.2448	1.5687	0.8234
2010/09	720	3.5947	3.4202	0.6207	-0.1745	1.329	1.6296	0.7794
2010/10	744	3.1617	3.3751	0.5746	0.2134	1.1505	1.4636	0.7587
2010/11	720	3.5453	3.3863	0.5397	-0.1589	1.3725	1.7219	0.7406
2010/12	744	4.6579	4.8997	0.6947	0.2418	1.5326	1.9511	0.8286
2011/01	744	4.5517	5.0916	0.7091	0.5398	1.3639	1.7477	0.828
2011/02	672	3.6668	3.7127	0.6105	0.0459	1.3055	1.62	0.7823
all	8760	3.8957	3.996	0.6808	0.1003	1.3394	1.7185	0.822

Specific Humidity (g/kg)

Fukuoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	5.2744	5.1721	0.9521	-0.1023	0.4685	0.6383	0.975
2010/04	720	6.144	6.0729	0.9502	-0.0711	0.5717	0.7614	0.9723
2010/05	744	8.9012	8.4724	0.8992	-0.4288	0.8653	1.2036	0.9378
2010/06	720	13.3451	12.9555	0.9172	-0.3896	0.991	1.3719	0.9433
2010/07	744	16.9123	16.7089	0.6095	-0.2034	0.9644	1.2331	0.7473
2010/08	744	17.699	17.2972	0.6838	-0.4018	1.1929	1.6024	0.8038
2010/09	720	14.4601	13.9724	0.9117	-0.4878	1.0113	1.4851	0.9476
2010/10	744	9.5416	9.3118	0.9127	-0.2299	0.7921	1.0494	0.9525
2010/11	720	5.5896	5.5749	0.8887	-0.0147	0.4801	0.6036	0.9417
2010/12	744	4.5972	4.5553	0.9577	-0.042	0.4159	0.513	0.9775
2011/01	744	2.9164	2.9917	0.8453	0.0753	0.3288	0.4206	0.9013
2011/02	672	4.4124	4.304	0.9213	-0.1084	0.4132	0.5747	0.9575
all	8760	9.1803	8.9796	0.982	-0.2007	0.7097	1.0367	0.9906
Hiroshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.5805	4.7353	0.8845	0.1548	0.5934	0.8909	0.9321
2010/04	720	5.7161	5.7554	0.9289	0.0393	0.6623	0.8868	0.9629
2010/05	744	7.7473	7.9221	0.8834	0.1748	0.8997	1.2913	0.9373
2010/06	720	12.3129	12.5249	0.9433	0.212	0.9574	1.1879	0.9642
2010/07	744	16.2432	16.7318	0.72	0.4887	0.9478	1.1423	0.7919
2010/08	744	16.7945	17.5397	0.7118	0.7451	1.0502	1.2381	0.7718
2010/09	720	13.4219	13.5381	0.9406	0.1163	0.9754	1.2512	0.9658
2010/10	744	8.9617	8.7019	0.9025	-0.2598	0.7735	1.0407	0.9466
2010/11	720	5.3533	5.2249	0.8646	-0.1284	0.5733	0.7663	0.9241
2010/12	744	4.2468	4.2361	0.9198	-0.0108	0.4613	0.5964	0.9583
2011/01	744	2.8421	2.7748	0.7447	-0.0673	0.3009	0.3912	0.8541
2011/02	672	3.7847	3.9622	0.9167	0.1775	0.4088	0.5726	0.9396
all	8760	8.5315	8.6689	0.9843	0.1374	0.7187	0.9838	0.9913

Kagoshima								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	6.8565	6.4862	0.951	-0.3702	0.7347	0.9692	0.9699
2010/04	720	7.9552	7.4484	0.963	-0.5067	0.7599	0.9756	0.9729
2010/05	744	10.6956	9.9315	0.88	-0.7641	1.1138	1.5829	0.918
2010/06	719	14.6765	14.6151	0.9477	-0.0614	0.8073	1.0519	0.973
2010/07	744	18.4681	17.924	0.7324	-0.5441	0.8886	1.1895	0.8167
2010/08	744	19.1944	18.5132	0.6515	-0.6813	1.0191	1.3148	0.7568
2010/09	720	16.8315	15.5368	0.9154	-1.2947	1.4429	1.9021	0.9067
2010/10	744	11.2317	10.3923	0.9342	-0.8394	1.0913	1.393	0.9475
2010/11	720	6.9747	6.2596	0.8879	-0.7152	0.9089	1.1561	0.9093
2010/12	744	5.7888	5.1701	0.9477	-0.6188	0.7557	0.9417	0.9539
2011/01	743	3.3228	2.8735	0.7762	-0.4493	0.5018	0.6507	0.7971
2011/02	672	5.5984	5.056	0.9324	-0.5424	0.6992	0.9169	0.9476
all	8758	10.6639	10.0479	0.9833	-0.616	0.8943	1.2152	0.9887
Kochi								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	5.8645	5.3967	0.9043	-0.4678	0.912	1.2046	0.942
2010/04	720	7.2923	6.4436	0.9234	-0.8488	1.115	1.4178	0.9399
2010/05	744	9.7174	8.7925	0.9105	-0.9249	1.2128	1.6292	0.9336
2010/06	720	14.5781	13.5853	0.9533	-0.9928	1.2049	1.4613	0.9556
2010/07	744	18.5064	17.4447	0.7275	-1.0617	1.2302	1.5395	0.7483
2010/08	744	19.496	18.4669	0.7121	-1.0291	1.2152	1.4898	0.7459
2010/09	720	15.844	14.3512	0.9339	-1.4928	1.6101	1.9929	0.9265
2010/10	744	10.7371	9.4673	0.8939	-1.2698	1.4617	1.8337	0.9001
2010/11	720	6.3883	5.3776	0.8599	-1.0107	1.1299	1.4222	0.8392
2010/12	744	4.7063	4.3467	0.9073	-0.3596	0.668	0.924	0.9402
2011/01	744	2.6221	2.5342	0.7883	-0.0879	0.2998	0.3982	0.8735
2011/02	672	4.4786	4.1669	0.9083	-0.3117	0.6448	0.8372	0.9451
all	8760	10.0538	9.231	0.9823	-0.8227	1.0598	1.4132	0.9858
Nagoya								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.4463	4.5166	0.9264	0.0703	0.5252	0.7574	0.9555
2010/04	720	5.5798	5.3921	0.94	-0.1877	0.5606	0.7832	0.967
2010/05	744	7.7594	7.3079	0.9257	-0.4514	0.7935	1.0211	0.953
2010/06	720	12.3655	12.2317	0.9437	-0.1338	0.9005	1.1784	0.9685
2010/07	744	15.9381	15.5878	0.6858	-0.3503	1.1206	1.4117	0.7965
2010/08	744	17.0994	16.8185	0.6456	-0.2809	1.0092	1.2768	0.7801
2010/09	695	13.5338	13.1863	0.9149	-0.3476	0.9605	1.2512	0.9512
2010/10	744	10.0538	8.8109	0.8967	-1.2429	1.3003	1.5931	0.8762
2010/11	720	5.5966	4.8815	0.9011	-0.7152	0.7719	0.9517	0.8902

2010/12	744	4.4493	4.0648	0.931	-0.3845	0.5259	0.667	0.9479
2011/01	744	3.0627	2.6618	0.6806	-0.4009	0.4952	0.6127	0.7356
2011/02	672	3.7679	3.5338	0.9443	-0.234	0.4597	0.5693	0.9648
all	8735	8.6569	8.2668	0.9821	-0.3901	0.7873	1.059	0.9895
Nobeoka								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	5.9112	5.6263	0.9467	-0.2849	0.6681	0.8665	0.9684
2010/04	720	7.4669	6.8903	0.9588	-0.5766	0.833	1.0276	0.9682
2010/05	744	9.907	8.9575	0.9258	-0.9494	1.1964	1.5217	0.9373
2010/06	720	14.737	13.5856	0.9166	-1.1513	1.3601	1.6737	0.9218
2010/07	744	18.6586	17.129	0.5231	-1.5296	1.6594	2.001	0.583
2010/08	744	19.783	17.9471	0.6341	-1.8359	1.8774	2.2131	0.595
2010/09	720	16.3714	14.555	0.9344	-1.8163	1.8454	2.1993	0.8982
2010/10	744	10.9551	9.9956	0.911	-0.9595	1.2529	1.5647	0.928
2010/11	720	6.5495	5.9134	0.9166	-0.6361	0.8092	1.0156	0.9311
2010/12	744	4.9393	4.6277	0.9505	-0.3116	0.5537	0.7171	0.9685
2011/01	744	2.7301	2.5804	0.8136	-0.1497	0.3114	0.4206	0.8875
2011/02	672	4.8353	4.5383	0.9273	-0.297	0.6107	0.7869	0.9553
all	8759	10.2705	9.3927	0.9835	-0.8778	1.084	1.4595	0.9843
Totori								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	743	4.6247	4.6401	0.9244	0.0154	0.4626	0.6002	0.9583
2010/04	720	5.5081	5.4894	0.9382	-0.0187	0.5317	0.6873	0.9675
2010/05	744	8.0541	7.9154	0.9071	-0.1387	0.7126	0.9816	0.9503
2010/06	720	12.2979	12.163	0.9338	-0.1349	0.9255	1.2007	0.9626
2010/07	744	16.1616	16.2361	0.7331	0.0745	0.8242	1.0312	0.841
2010/08	744	17.4807	17.55	0.7486	0.0693	0.8835	1.1704	0.8595
2010/09	717	14.4585	13.6619	0.9222	-0.7966	1.1735	1.4757	0.9444
2010/10	697	10.055	9.4721	0.8954	-0.5829	0.8958	1.1413	0.9278
2010/11	720	5.8707	5.3995	0.8412	-0.4712	0.6866	0.8686	0.885
2010/12	744	4.5154	4.5011	0.9021	-0.0143	0.4941	0.6353	0.9478
2011/01	744	3.4205	3.3443	0.641	-0.0762	0.3337	0.4265	0.7957
2011/02	672	3.9888	4.0012	0.8739	0.0124	0.471	0.6022	0.9249
all	8709	8.8949	8.726	0.984	-0.1689	0.6988	0.9503	0.9917
Wakayama								
	N	obs_ave	sim_ave	R	MBE	MAE	RMSE	IA
2010/03	744	4.7932	5.2347	0.9352	0.4415	0.6175	0.8636	0.9547
2010/04	720	5.6975	6.0071	0.9548	0.3096	0.5843	0.7531	0.9719
2010/05	744	8.7525	8.7011	0.9208	-0.0514	0.8119	1.0721	0.9587
2010/06	720	13.0965	13.07	0.9478	-0.0264	0.9756	1.2409	0.9645
2010/07	744	16.5179	17.0903	0.6947	0.5724	1.0054	1.2198	0.7925

2010/08	744	17.4943	18.1982	0.5997	0.7039	1.2019	1.433	0.7306
2010/09	720	13.826	14.4631	0.9361	0.6371	1.1638	1.4068	0.9558
2010/10	744	9.6269	9.7921	0.9277	0.1652	0.6555	0.8707	0.9603
2010/11	720	5.7547	5.8457	0.8165	0.091	0.6735	0.8897	0.9012
2010/12	744	4.3911	4.8626	0.9167	0.4715	0.6583	0.8657	0.9354
2011/01	744	2.7575	3.2131	0.793	0.4556	0.4965	0.5655	0.7496
2011/02	672	3.7834	4.2097	0.9289	0.4263	0.5469	0.7421	0.9416
all	8760	8.9082	9.2584	0.9845	0.3501	0.7838	1.0296	0.991

N : Number of observations
