



Evaluating the spatial and temporal variations of the performance of CAMS Radiation Service and HelioClim-3 databases of surface irradiation in Germany

Mathilde Marchand, Yves-Marie Saint-Drenan, Laurent Saboret, Claire Thomas, Lucien Wald

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Partners



Authors - speaker

Mathilde MARCHAND
TRANSVALOR

Yves-Marie SAINT-DRENAN
MINES ParisTech

Laurent SABORET
TRANSVALOR

Claire THOMAS
TRANSVALOR

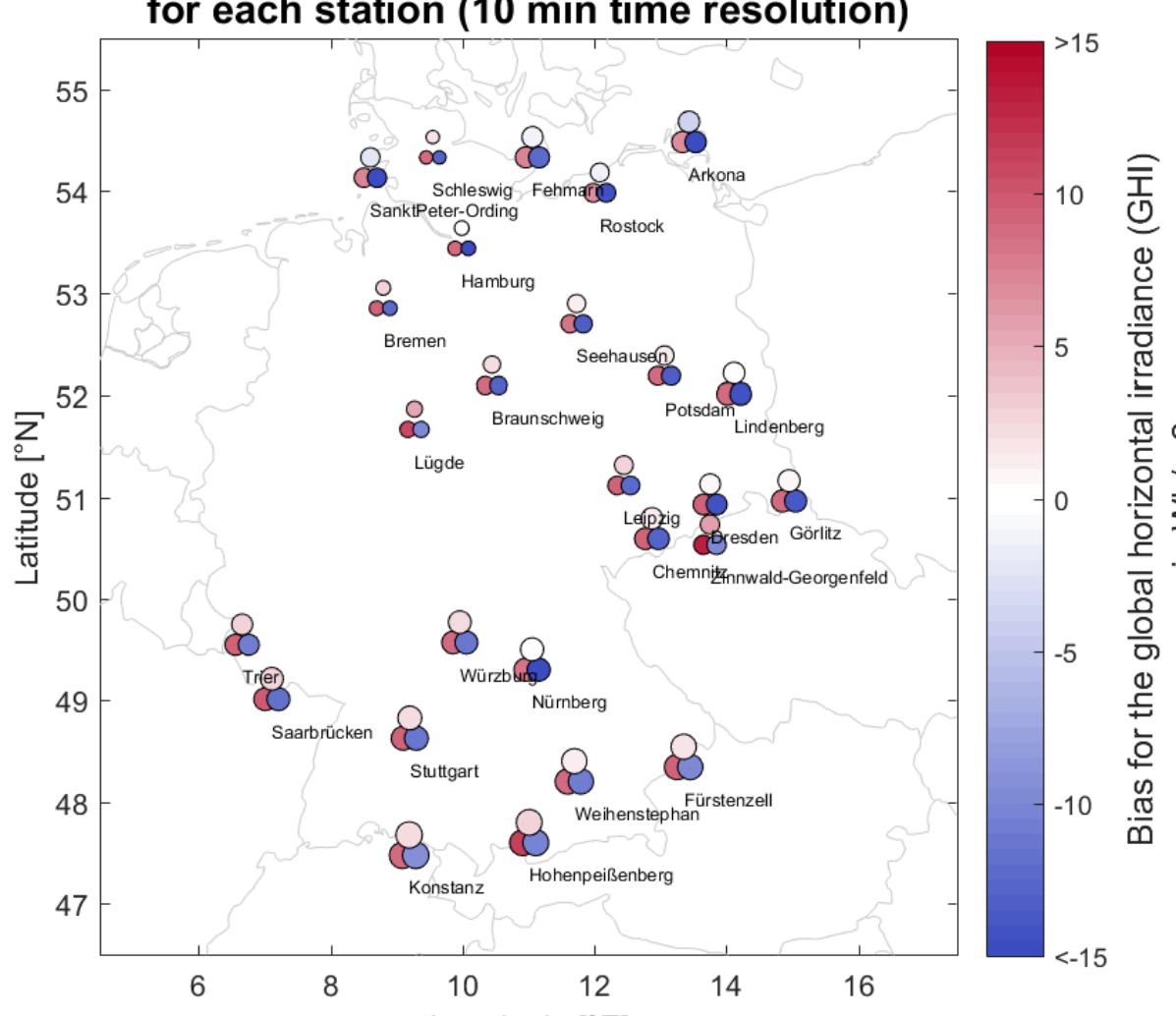
Lucien WALD
MINES ParisTech



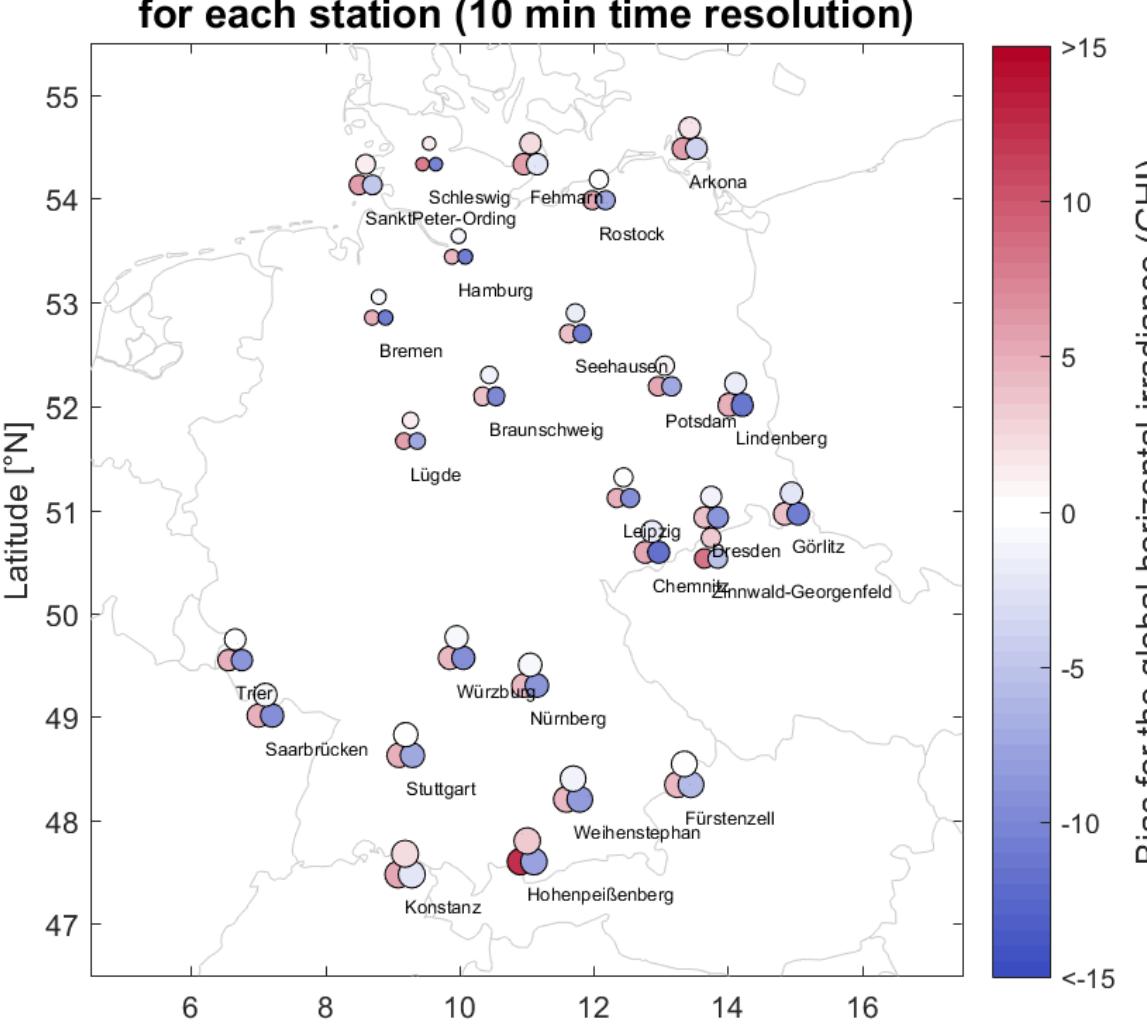
Average GHI: 40 Wh/m²
Average GHI: 45 Wh/m²
Average GHI: 50 Wh/m²

all skies
KT<0.2
KT>0.7

Comparison of ground measurement with CAMS-RAD for each station (10 min time resolution)



Comparison of ground measurement with HC3v5 for each station (10 min time resolution)



CAMS-RAD/HC3v5	All-skies					KT>0.7					KT<0.2													
	Average (Wh/m ²)	Bias (Wh/m ²)	Stdev (Wh/m ²)	CC (-)	Average (Wh/m ²)	Bias (Wh/m ²)	Stdev (Wh/m ²)	CC (-)	Average (Wh/m ²)	Bias (Wh/m ²)	Stdev (Wh/m ²)	CC (-)	Average (Wh/m ²)	Bias (Wh/m ²)	Stdev (Wh/m ²)	CC (-)								
Konstanz	48	48	2	2	16	13	0.932	0.957	115	115	-9	-2	12	12	0.915	0.922	11	11	9	5	13	7	0.693	0.699
Hohenpeissenberg	48	48	3	3	17	15	0.919	0.933	105	105	-10	-8	12	14	0.942	0.922	11	11	11	12	14	7	0.679	0.732
Weihenstephan	47	47	1	-1	16	14	0.926	0.942	111	111	-11	-8	13	17	0.910	0.861	11	11	9	4	12	7	0.707	0.729
Fürth	47	47	2	0	15	13	0.931	0.954	112	112	-10	-6	12	16	0.920	0.883	11	11	9	4	13	7	0.696	0.702
Stuttgart	46	46	2	0	16	14	0.919	0.944	113	113	-11	-7	14	17	0.884	0.853	11	11	9	5	13	7	0.706	0.706
Saarbrücken	45	45	3	-1	17	14	0.912	0.941	112	112	-12	-9	13	17	0.896	0.832	10	10	10	5	14	7	0.706	0.722
Nürnberg	46	46	0	-1	16	14	0.916	0.942	110	110	-15	-9	17	17	0.875	0.864	11	11	8	4	12	7	0.710	0.722
Trier	44	44	3	0	16	15	0.922	0.932	112	112	-11	-9	13	19	0.904	0.804	10	10	9	5	13	7	0.716	0.707
Würzburg	45	45	2	-1	16	15	0.922	0.934	112	112	-10	-7	13	18	0.901	0.820	10	10	9	4	13	7	0.732	0.713
Zinnwald-Georgenfeld	43	43	6	3	19	15	0.875	0.922	103	103	-10	-5	13	15	0.925	0.908	11	11	13	8	17	7	0.679	0.767
Chemnitz	45	45	1	-2	16	15	0.919	0.923	105	105	-13	-12	13	19	0.922	0.853	10	10	9	5	13	7	0.711	0.701
Dresden-Klotzsche	44	44	1	-1	16	14	0.911	0.937	109	109	-14	-9	15	17	0.871	0.851	10	10	9	4	13	7	0.713	0.708
Görlitz	45	45	1	-2	16	14	0.919	0.938	108	108	-14	-11	13	17	0.907	0.862	10	10	9	4	13	7	0.717	0.722
Leipzig	43	43	3	0	15	14	0.923	0.936	111	111	-12	-9	13	17	0.903	0.845	10	10	9	5	12	7	0.73	0.71
Lüdje	41	41	5	1	17	14	0.901	0.929	109	109	-10	-7	13	17	0.910	0.851	10	10	11	6	14	7	0.706	0.665
Braunschweig	45	45	0	-2	16	13	0.917	0.942	107	107	-14	-11	13	16	0.895	0.860	10	10	9	5	13	7	0.728	0.709
Nürnberg	42	42	2	-1	16	13	0.914	0.939	109	109	-13	-10	13	18	0.894	0.833	10	10	9	4	13	6	0.726	0.729
Potsdam	43	43	1	1	15	12	0.92	0.948	108	108	-13	-7	13	16	0.893	0.888	10	10	9	5	13	7	0.732	0.736
Seehausen	43	43	2	-2	15	14	0.918	0.932	107	107	-13	-11	13	18	0.901	0.837	10	10	8	4	13	7	0.725	0.736
Bremen	41	41	3	-1	15	14	0.912	0.929	108	108	-12	-11	13	19	0.893	0.809	10	10	9	5	14	7	0.718	0.738
Hamburg	41	41	0	-1	16	13	0.907	0.939	107	107	-11	-16	17	18	0.853	0.859	10	10	9	4	13	6	0.723	0.746
Rostock	43	43	-1	0	14	12	0.934	0.948	107	107	-14	-7	14	14	0.877	0.884	9	9	7	5	11	7	0.733	0.746
Sankt Peter-Ording	43	43	-2	1	14	11	0.935	0.964	106	106	-15	-5	15	9	0.876	0.954	9	9	7	6	10	7	0.732	0.766
Schleswig	40	40	2	1	15	14	0.913	0.93	106	106	-13	-10	13	16	0.900	0.859	9	9	8	3	13	9	0.732	0.763
Fehmarn	44	44	-4	2	14	10	0.938	0.965	107	107	-12	-2	13	8	0.885	0.959	9	9	7	6	10	7	0.739	0.767
Arkona	44	44	-4	2	14	10	0.936	0.968	106	106	-16	-4	15	7	0.863	0.970	9	9	7	6	9	7	0.710	0.787
All stations	44	44	1	0	16	14	0.918	0.941	109	109	-13	-8	14	16	0.897	0.72	10	10	9	5	13	7	0.714	0.715