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*Supplement of*

## **Modelling annual mass balances of eight Scandinavian glaciers using statistical models**

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Glacier	Observation period	input Variables	Model type	Variance explained	Cross-validated var. exp.	MAD [m we]	LM Coef. P	Lower bound	Upper bound	LM Coef. T	Upper bound	Lower bound
ALF	1963 - 2010	T MJJAS	AM	75.5	66.1	0.66	<b>0.773</b>	0.62	0.92	<b>-0.51</b>	-0.36	-0.67
	NAO+	P NDJFM		73			0.58	0.37	0.8	-0.61	-0.4	-0.4
	NAO-			53			0.67	0.37	0.97	-0.61	-0.31	-0.91
	AMO-			75			<b>0.85</b>	0.67	1.02	<b>-0.27</b>	-0.1	-0.44
REM	1963 - 2010	T MJJAS	LM	81.2	77.9	0.37	<b>0.83</b>	0.7	0.96	<b>-0.52</b>	-0.39	-0.64
	NAO+	P NDJFM		82			<b>0.78</b>	0.61	0.95	<b>-0.46</b>	-0.29	-0.63
	NAO-			67			0.71	0.46	0.96	-0.73	-0.48	-0.98
	AMO-			85			<b>0.88</b>	0.74	1.01	<b>-0.37</b>	-0.23	-0.5
NIG	1962 - 2010	T MJJAS	LM	76.5	72.6	0.45	<b>0.77</b>	0.63	0.91	<b>-0.57</b>	-0.43	-0.75
	NAO+	P NDJFM		76			<b>0.69</b>	0.5	0.9	<b>-0.5</b>	-0.31	-0.71
	NAO-			69			0.6	0.39	0.88	-0.75	-0.49	-0.98
	AMO-			0.78			<b>0.82</b>	0.66	0.99	<b>-0.4</b>	-0.24	-0.56
STO	1949 - 2010	T MJJAS	CI	68.1	65.5	0.32	0.60	0.46	0.75	-0.66	-0.52	-0.8
	NAO+	P NDJFM		67			0.58	0.37	0.79	-0.6	-0.4	-0.81
	NAO-			63			<b>0.46</b>	0.23	0.69	<b>-0.79</b>	-0.56	-1.01
	AMO+			61			<b>0.47</b>	0.23	0.71	<b>-0.73</b>	-0.49	-0.97
	AMO-			75			<b>0.77</b>	0.6	0.94	<b>-0.47</b>	-0.29	-0.64
HEL	1962 - 2010	T JJA	LM	69	64.3	0.30	<b>0.45</b>	0.29	0.61	<b>-0.77</b>	-0.61	-0.93
	NAO+	P ONDJFMA		59			<b>0.35</b>	0.08	0.61	<b>-0.68</b>	-0.32	-0.93
	NAO-			74			<b>0.39</b>	0.18	0.62	<b>-0.92</b>	-0.7	-1.14
	AMO-			69			0.64	0.45	0.83	-0.52	-0.33	-0.71
GR	1962 - 2010	T JJA	LM	54.1	47.7	0.35	<b>0.30</b>	0.1	0.49	<b>-0.72</b>	-0.52	-0.91
	NAO+	P		46			<b>0.26</b>	-0.04	0.56	<b>-0.62</b>	-0.32	-0.93

	NAO-	ONDJFMA		60			<b>0.21</b>	-0.08	0.47	<b>-0.82</b>	-0.54	-1.09
	AMO-			45			0.47	0.22	0.72	-0.47	-0.22	-0.73
ENG	1970 - 2010	T MJJAS	CI	74.3	70.8	0.47	0.713	0.55	0.87	-0.59	-0.43	-0.75
	NAO+	P		73			0.63	0.39	0.86	-0.63	-0.39	-0.86
	NAO-	ONDJFMA		72			0.76	0.48	0.98	-0.7	-0.46	-0.96
	AMO-			79			<b>0.75</b>	0.58	0.93	<b>-0.5</b>	-0.33	-0.68
STORGL	1946 - 2010	T MJJAS	CI	62.3	59.9	0.32	0.53	0.38	0.68	-0.60	-0.45	-0.75
	NAO+	P NDJFM		54			0.51	0.27	0.75	-0.59	-0.34	-0.83
	NAO-			65			<b>0.45</b>	0.22	0.63	<b>-0.68</b>	-0.49	-0.89
	AMO+			62			0.54	0.3	0.78	-0.62	-0.38	-0.86
	AMO-			63			0.58	0.37	0.79	-0.52	-0.31	-0.73