Space Weather

Supporting Information for

Model evaluation guidelines for geomagnetic index predictions

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Contents of this file

Table S1

Additional Supporting Information (Files uploaded separately)

Captions for Tables S1 to Sx (if larger than 1 page, upload as separate file)

Introduction

This supporting information document defines all of the acronyms used in the paper.

Acronym	Definition	Section of 1st Use/Def.
A	Intercept in linear regression formula	§3.1
ACE	Advanced Composition Explorer	§3.3
AE	Auroral electroject index	§1
AL	Lower auroral electroject index	§1
ARMAX	Autoregressive Moving Average Model With Exogenous Inputs (model)	§2.3
ARE	Absolute relative error, another name for MAE	§3.1
ARV	Average relative variance	§2.1, §3.1
AU	Upper auroral electrojet index	§1
AUL	Application Usability Level	§5
B	Slope in linear regression formula	§3.1
BFM	Burton et al.-type analytic model (model)	§2.1
CCMC	Community Coordinated Modeling Center	§1
CMIT	Coupled Magnetosphere-Ionosphere-Thermosphere (model)	§2.1
Cov(M,O)	Covariance of the data and model values	§3.1
DP1	Substorm current wedge current system	§2.3
DP2	Ionospheric Hall current system	§2.3
DSCOVR	Deep Space Climate Observatory	§3.3
Dst	Disturbance storm-time index	§1

Acronym	Definition	Section of 1st Use/Def.
Ey	Solar wind electric field y-component	§3.3
F	False alarms in a contingency table	§3.2
F10.7	Solar 10.7 cm radio flux signal	§2.4
FAR	False alarm ratio	§2.2, §3.2
FB	Frequency bias, or just bias	§3.2
GEM	Geospace Environment Modeling (NSF program)	§2.1
GFZ	German Research Centre for Geosciences	§4.2
H	Hits in a contingency table	§3.2
HEIDI	Hot Electron and Ion Drift Integrator (model)	§2.1
HWHM	Half width at half maximim	§2.1
HSS	Heidke skill score	§2.1, §3.2
IRF96	Impulse Response Function with 96 lags (model)	§2.1
Kp	Planetary K index	§1
LANL	Los Alamos National Laboratory	§4.3
LWS	Living With a Star (NASA Heliophysics Division program)	§1
M, M_i	Model values, model value at index *i*	§3.1
M	Misses in a contingency table	§3.2
MAE	Mean absolute error	§3.1
ME	Mean error	§2.1, §3.1
MLT	Magnetic local time	§4.3
N	Number of data-model pairs	§3.1
N	Correct negatives in a contingency table	§3.2
NARMAX	Nonlinear Autoregressive Moving Average Model With Exogenous Inputs (model)	§2.1
NARX	Nonlinear Autoregressive Model With Exogenous Inputs (model)	§2.2
NRMSE	Normalized root mean square error	§2.1
O, O_i	Observed values, observed value at index *i*	§3.1
OMNI	NASA's OMNI solar wind online database	§3.3
OpenGGCM	Open Geospace General Circulation Model (model)	§2.1
PE	Prediction efficiency	§2.1, §3.1
PC	Polar cap index	§1
POD	Probability of detection	§2.1, §3.2
POFD	Probability of false detection	§3.2
R	Pearson correlation coefficient	§2.1
RAM-SCB	Ring Current-Atmosphere Interactions Model with Self-Consistent Magnetic Field (model)	§2.1, §4.3
RCM	Rice Convection Model (model)	§2.1
RMSE	Root mean square error	§3.1
ROC	Receiver operating characteristic (curve), also relative operating characteristic, receiver-operator characteristic	§3.2
SS	Skill score	§2.2
SWMF	Space Weather Modeling Framework (model)	§2.1

Acronym	Definition	Section of 1st Use/Def.
SYM-H	Symmetric H index	§1
σ_O, σ_M, σ_X	Standard deviation of observations, model, or other value	§3.1
UPOS	University Partnering for Operational Support	§4, §4.2
VS	Volland-Stern (model)	§4.3
WINDMI	Solar Wind INteraction with the Magnetosphere and Ionosphere (model)	§4, §4.1

Table S1. A list of all acronyms used in the paper, along with the location of their first usage and detailed definition.