

Deep Neural Network for SYM-H Forecasting aided by ACE's SWICS plasma data

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Introduction

This file contains the figures for each of the test geomagnetic storms, comparing the observed and predicted SYM-H for the two trained neural networks for both time horizons, 1 and 2 hours ahead.

- 1 hour SWEPAM model in real-time: Model trained on SWEPAM data only and evaluated in real-time conditions, SWEPAM's missing data will be interpolated if the value to interpolate to is available, otherwise the last valid value is propagated for 1 hour ahead forecasts.
- 2 hours SWEPAM model in real-time: Model trained on SWEPAM data only and evaluated in real-time conditions, SWEPAM's missing data will be interpolated if the value to interpolate to is available, otherwise the last valid value is propagated for 1 hour ahead forecasts.

- 1 hour SWICS model in real-time: Model trained with SWEPMAM's missing data filled using SWICS evaluated in real-time conditions, SWEPMAM's missing data will be interpolated if the value to interpolate to is available, otherwise the last valid value is propagated for 1 hour ahead forecasts.

- 2 hours SWICS model in real-time: Model trained with SWEPMAM's missing data filled using SWICS evaluated in real-time conditions, SWEPMAM's missing data will be interpolated if the value to interpolate to is available, otherwise the last valid value is propagated for 2 hours ahead forecasts.

- Laboratory conditions SWICS model 1h: Model trained with SWEPMAM's missing data filled using SWICS and evaluated in the same conditions for 1 hour ahead forecasts.
- Laboratory conditions SWICS model 2h: Model trained with SWEPMAM's missing data filled using SWICS and evaluated in the same conditions for 2 hours ahead forecasts.

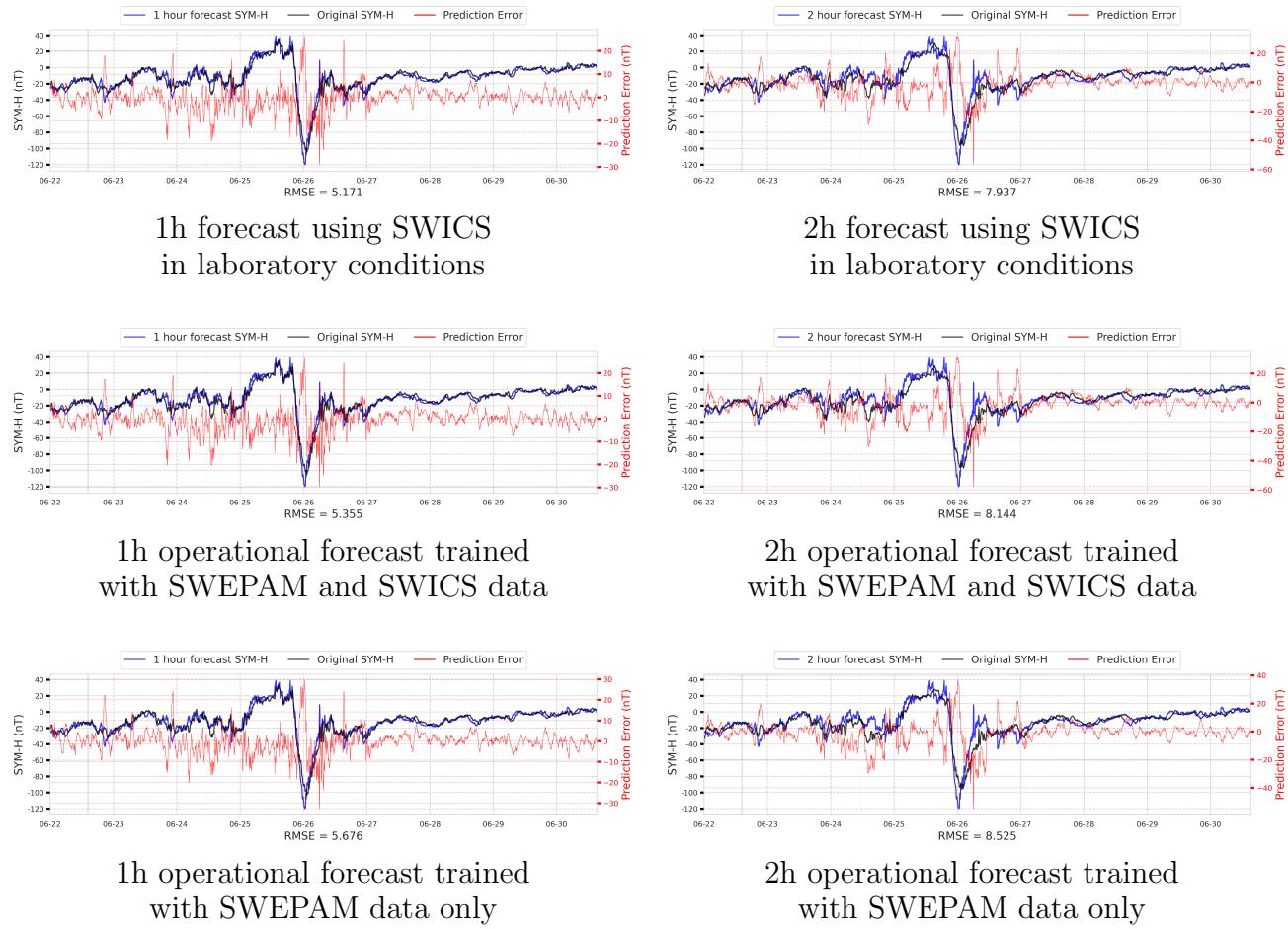


Table S1. Predictions for Storm Number 26 – June of 1998

June 26, 2023, 12:25pm

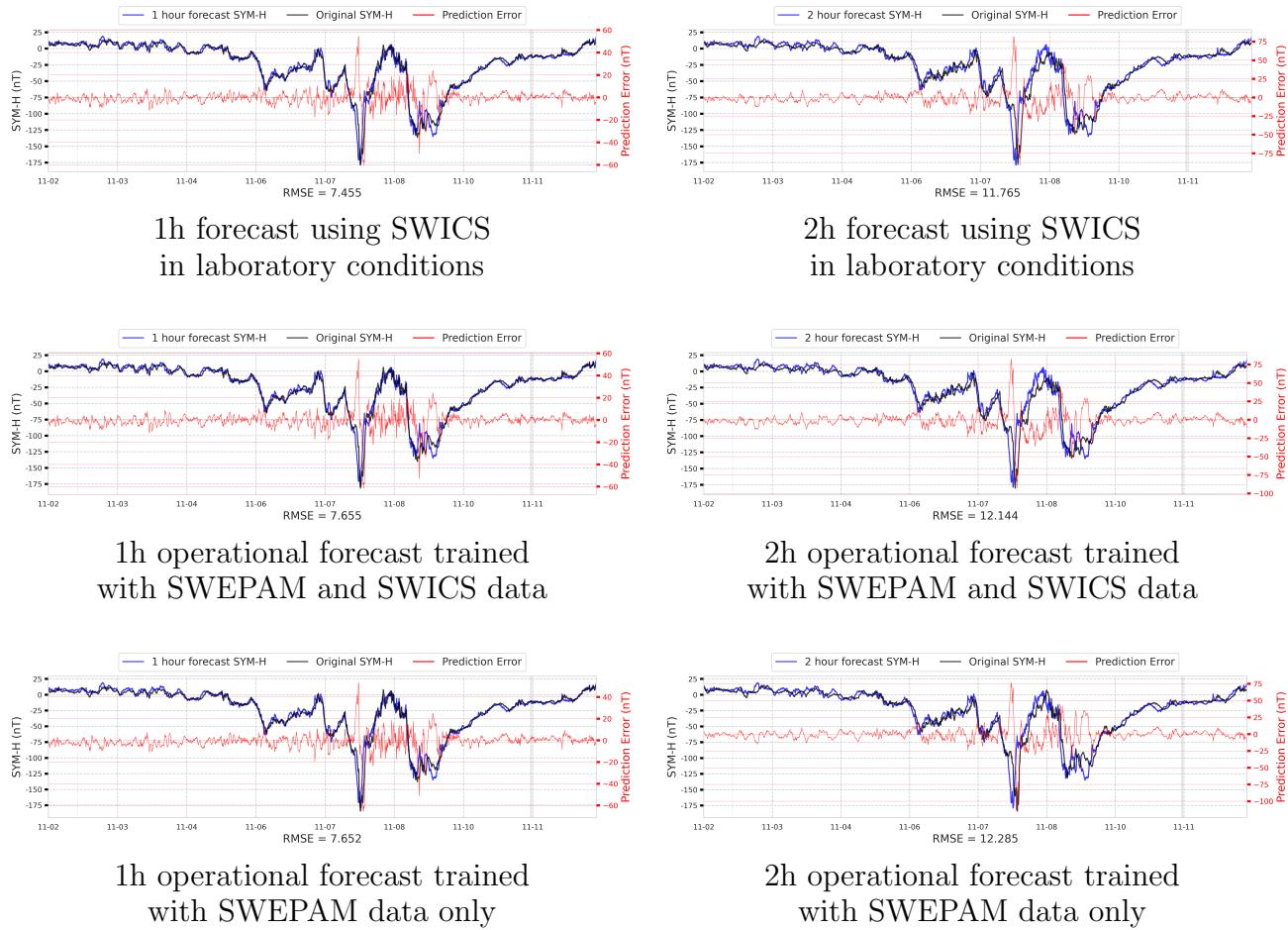


Table S2. Predictions for Storm Number 27 – November of 1998

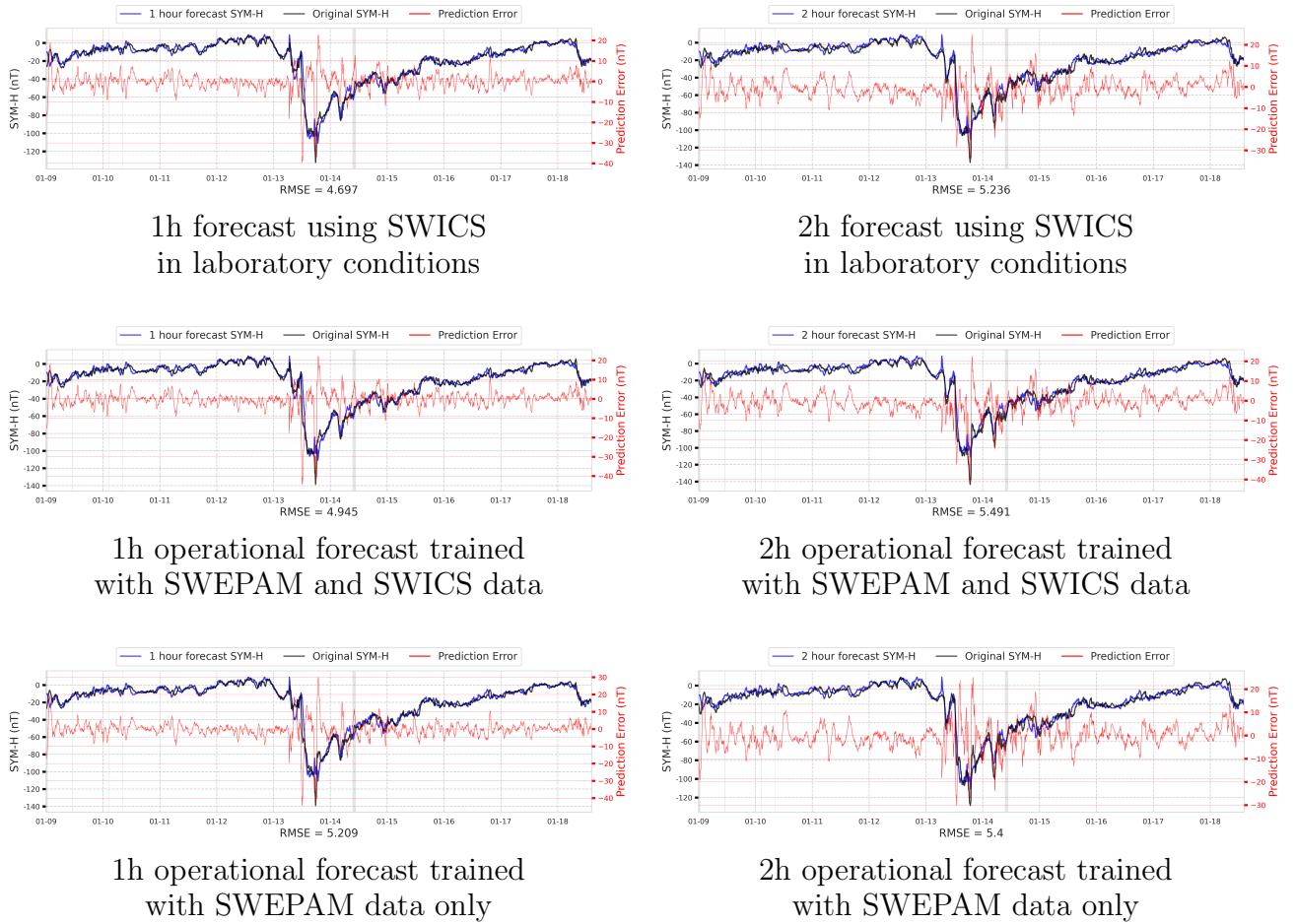


Table S3. Predictions for Storm Number 28 – January of 1999

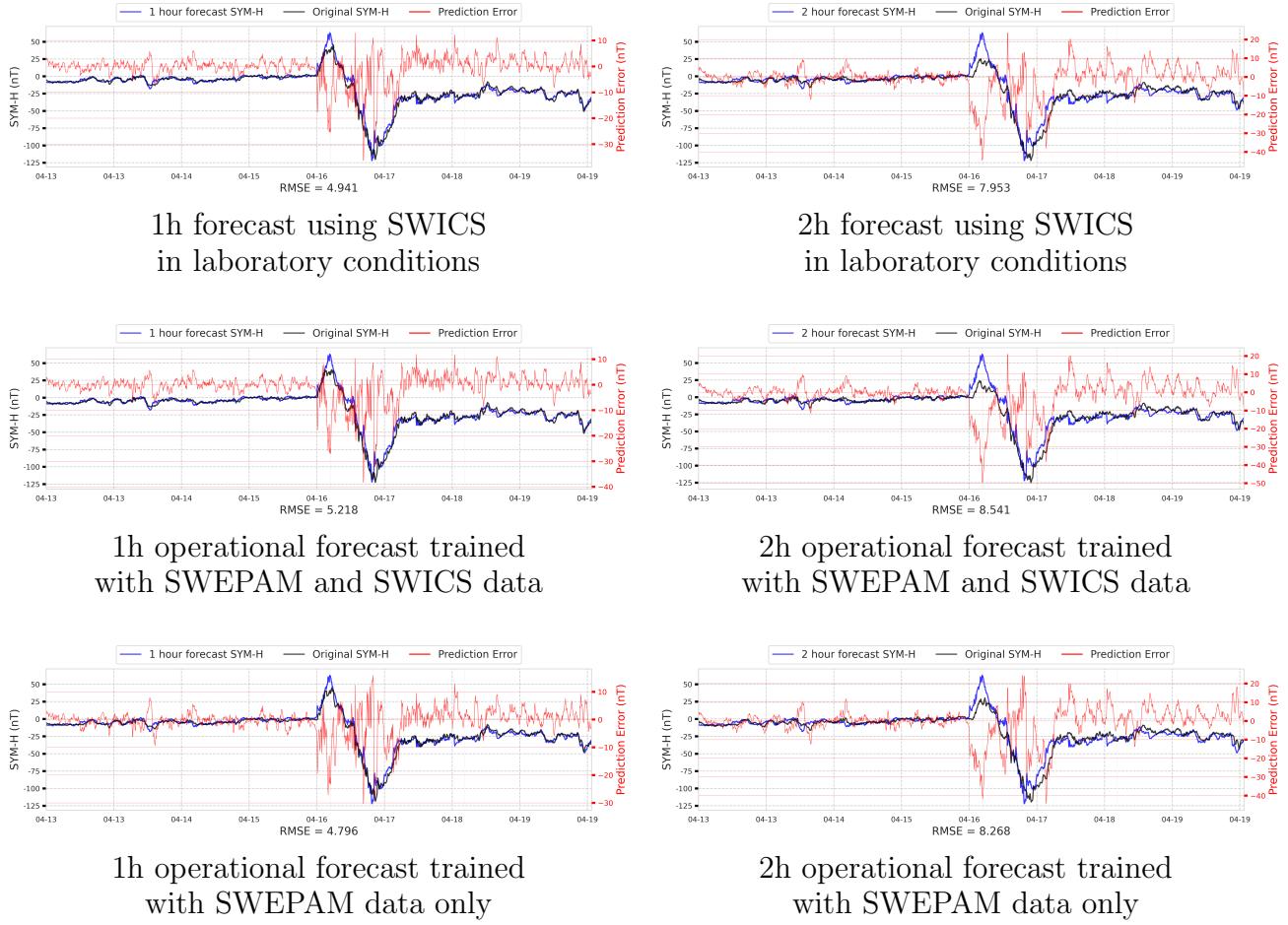


Table S4. Predictions for Storm Number 29 – April of 1999

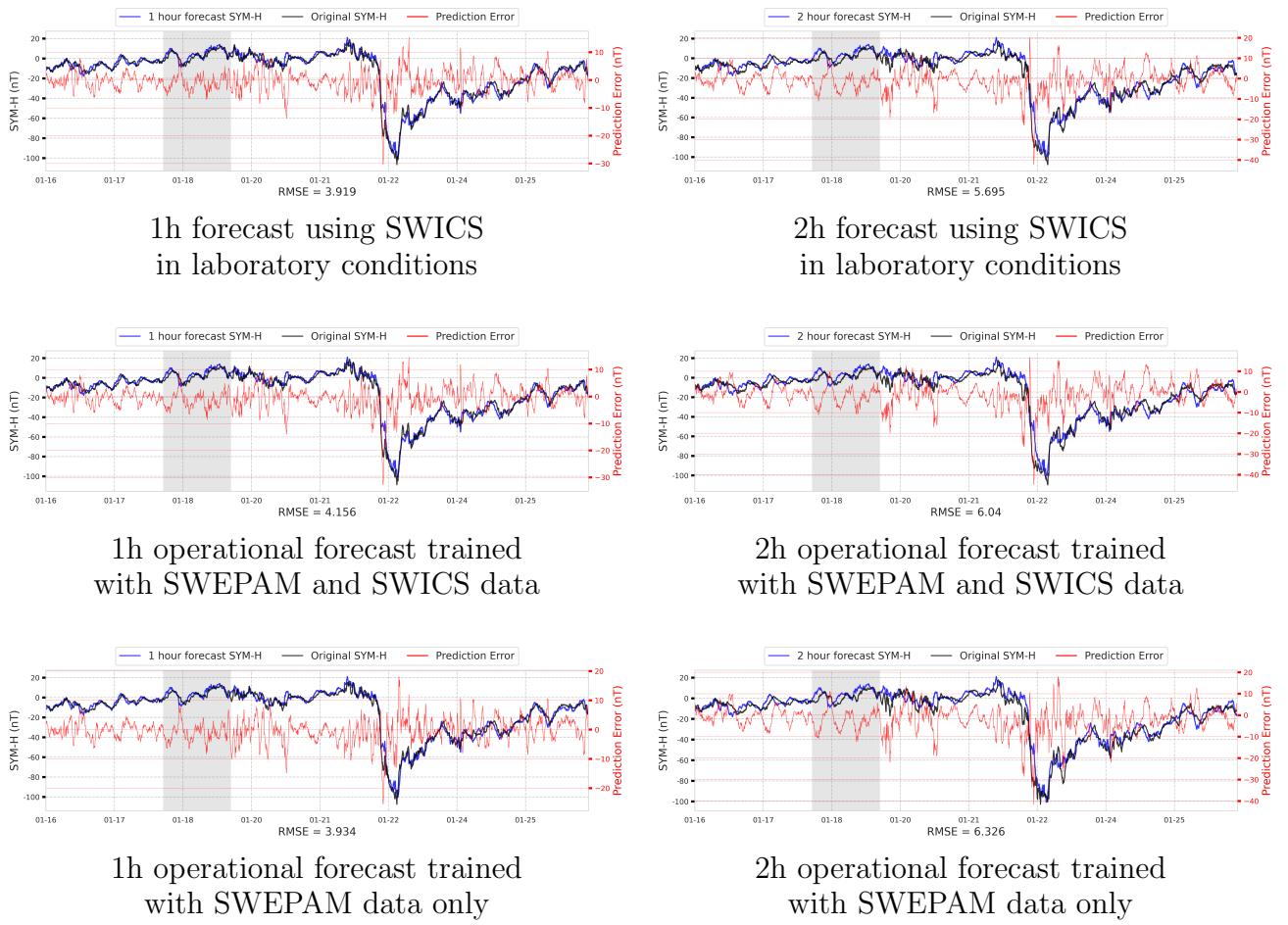


Table S5. Predictions for Storm Number 30 – January of 2000

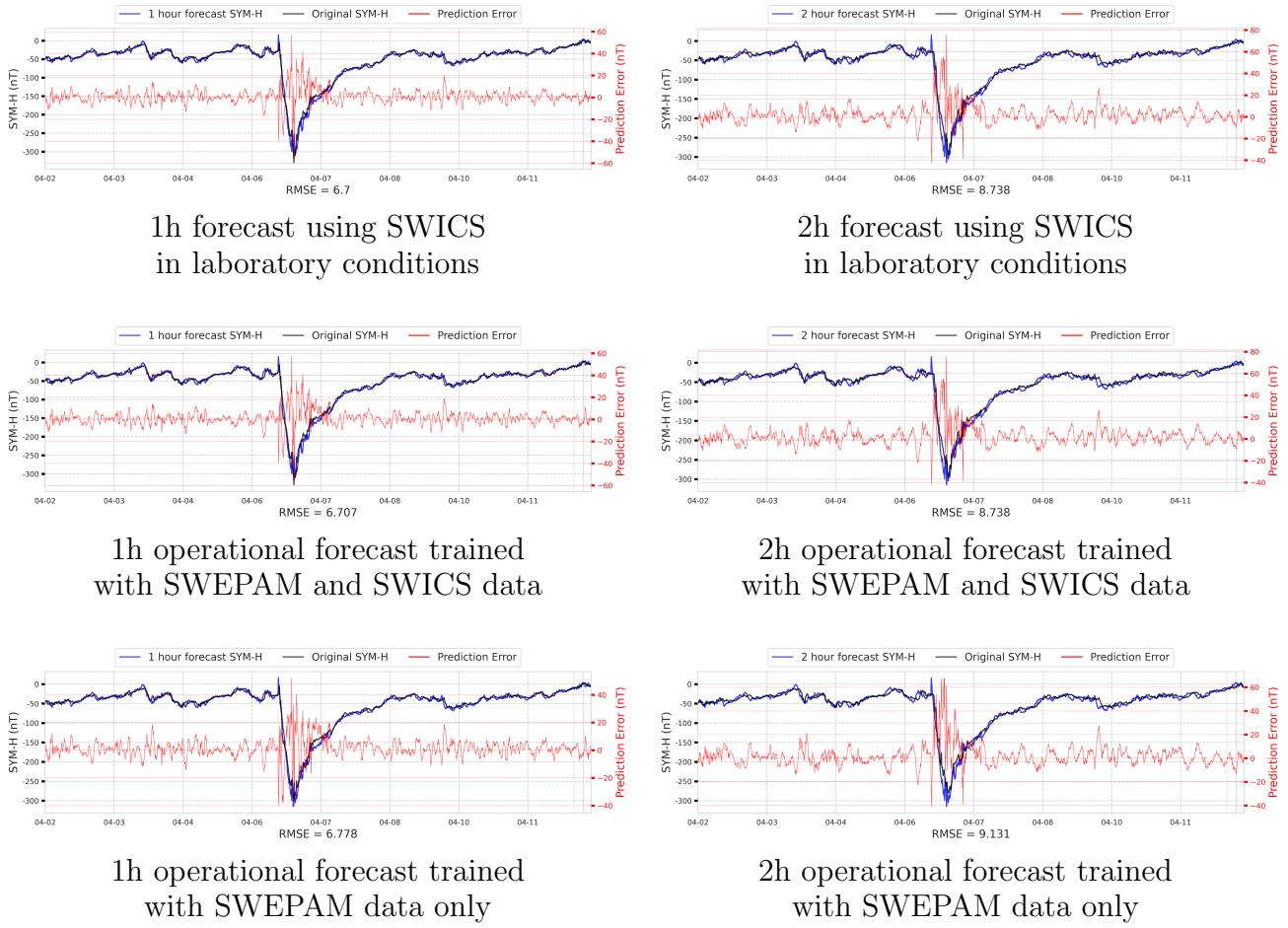


Table S6. Predictions for Storm Number 31 – April of 2000

June 26, 2023, 12:25pm

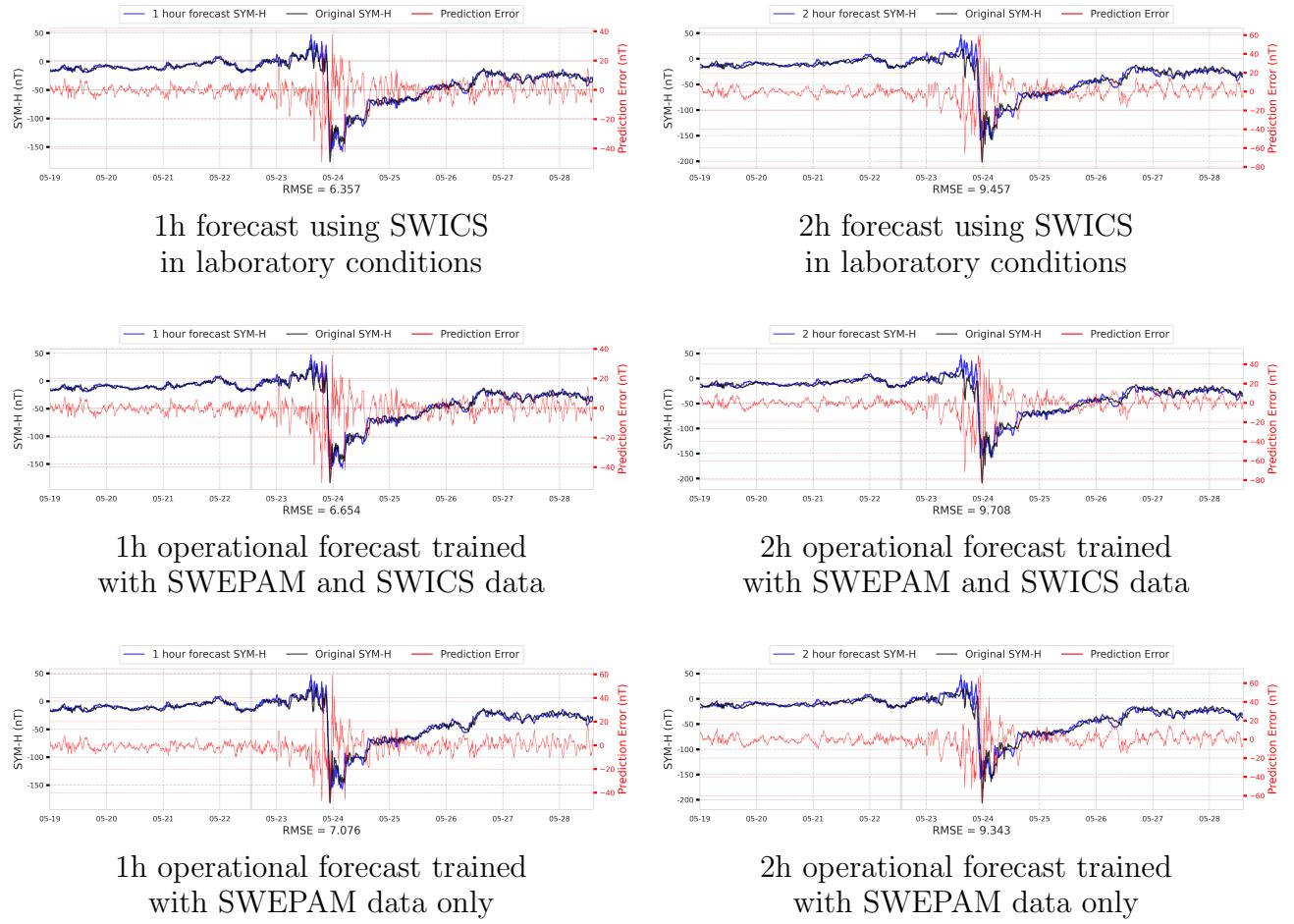


Table S7. Predictions for Storm Number 32 – May of 2000

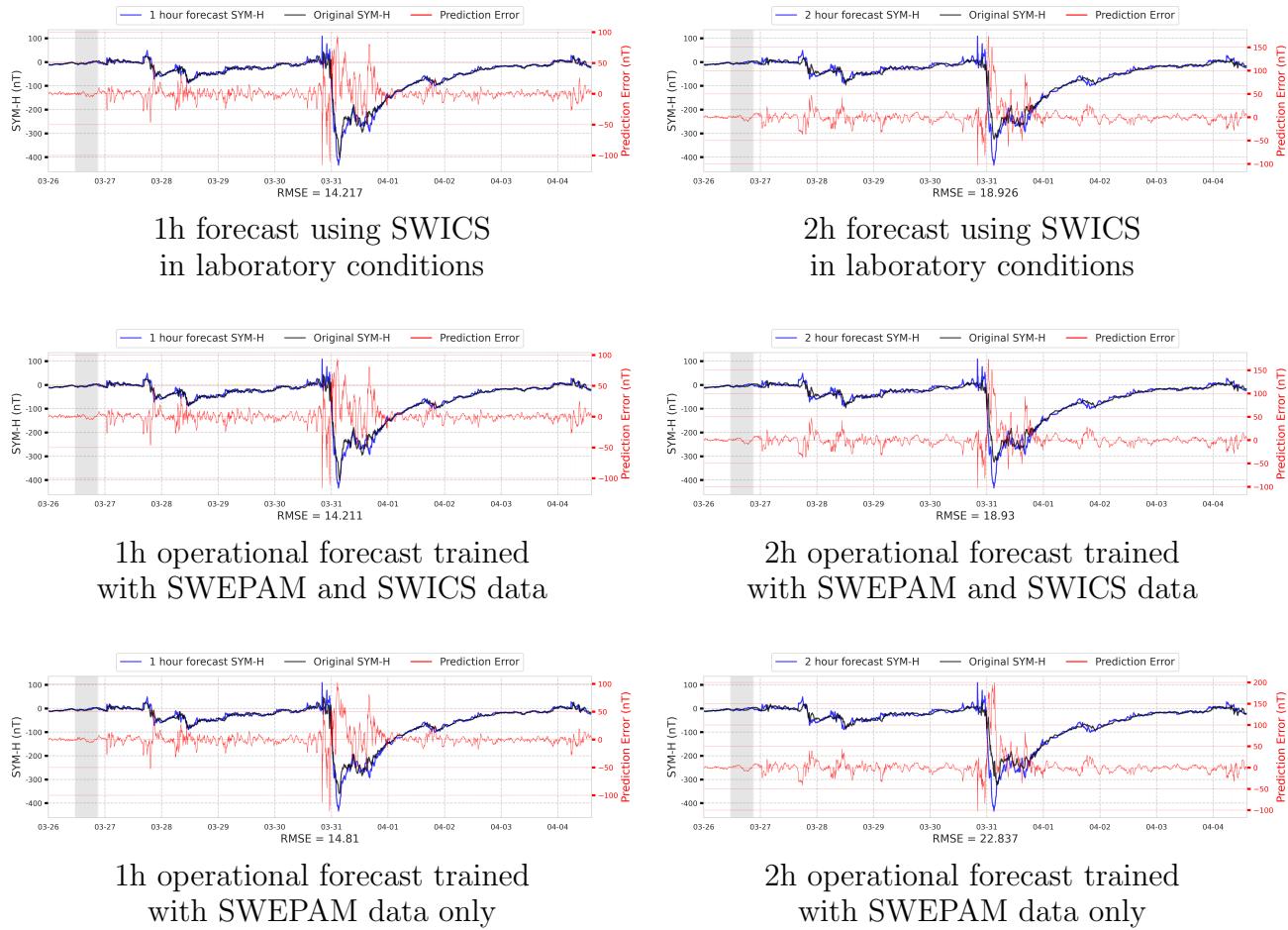


Table S8. Predictions for Storm Number 33 – March of 2001

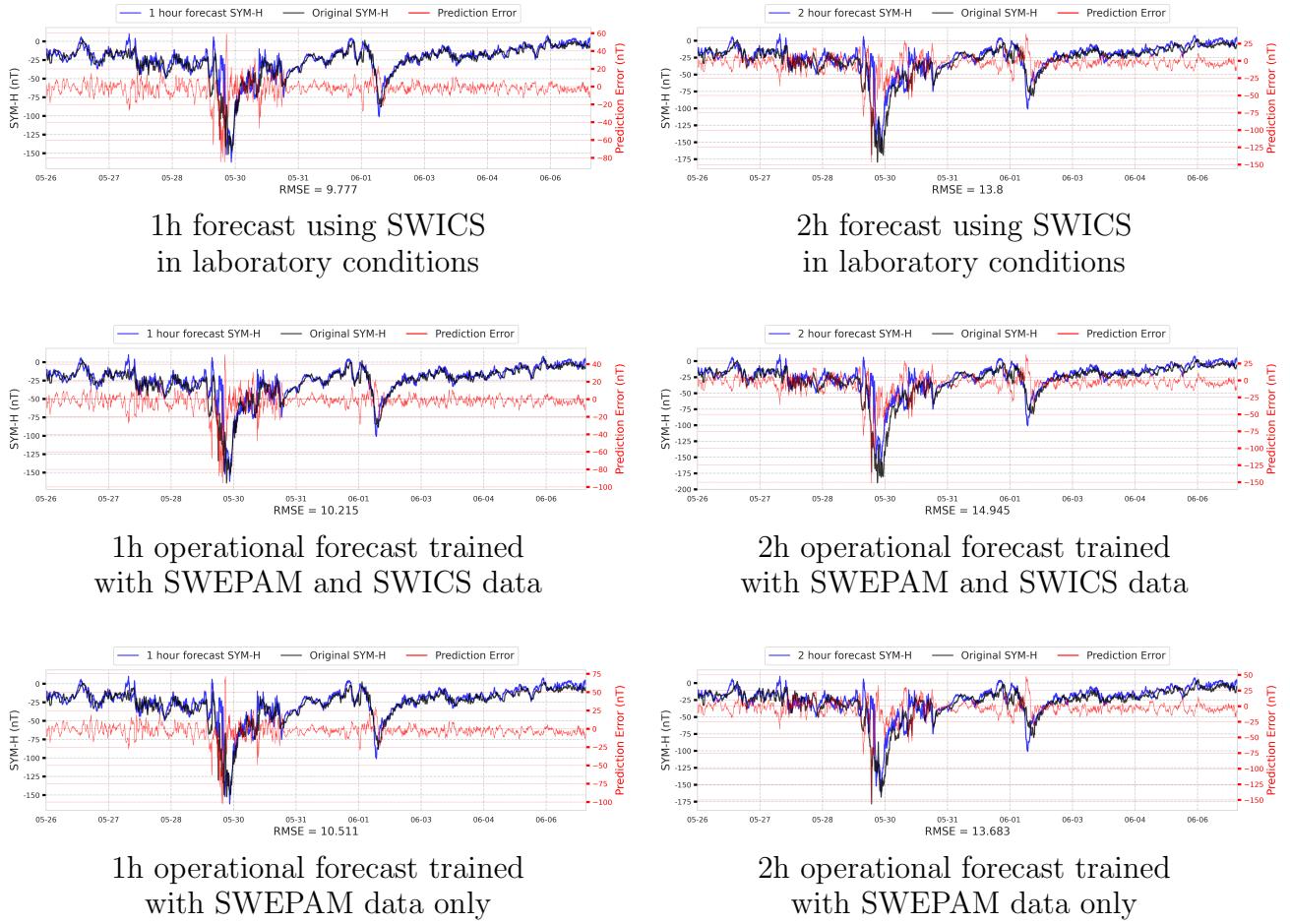


Table S9. Predictions for Storm Number 34 – June of 2003

June 26, 2023, 12:25pm

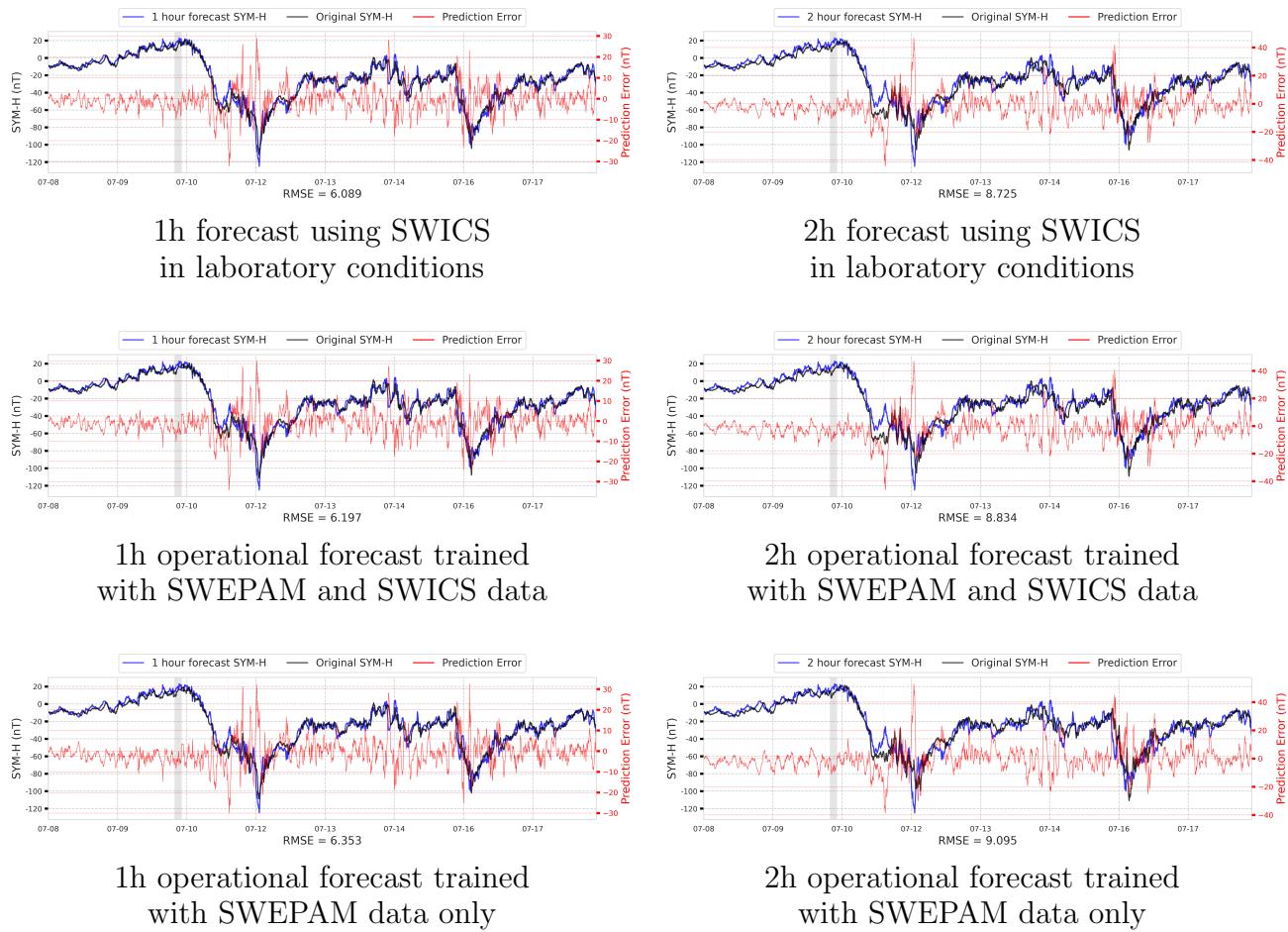


Table S10. Predictions for Storm Number 35 – July of 2003

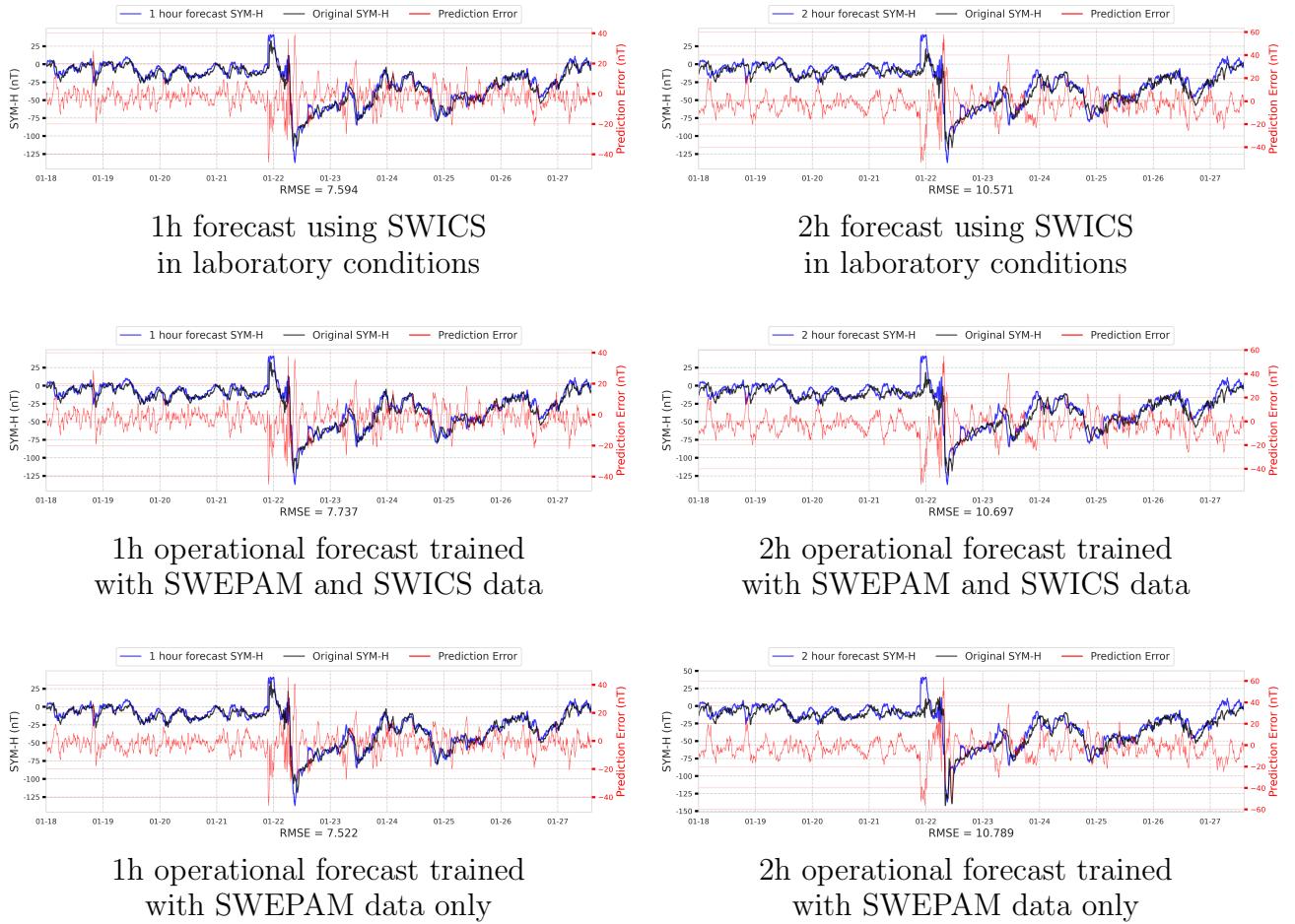


Table S11. Predictions for Storm Number 36 – January of 2004

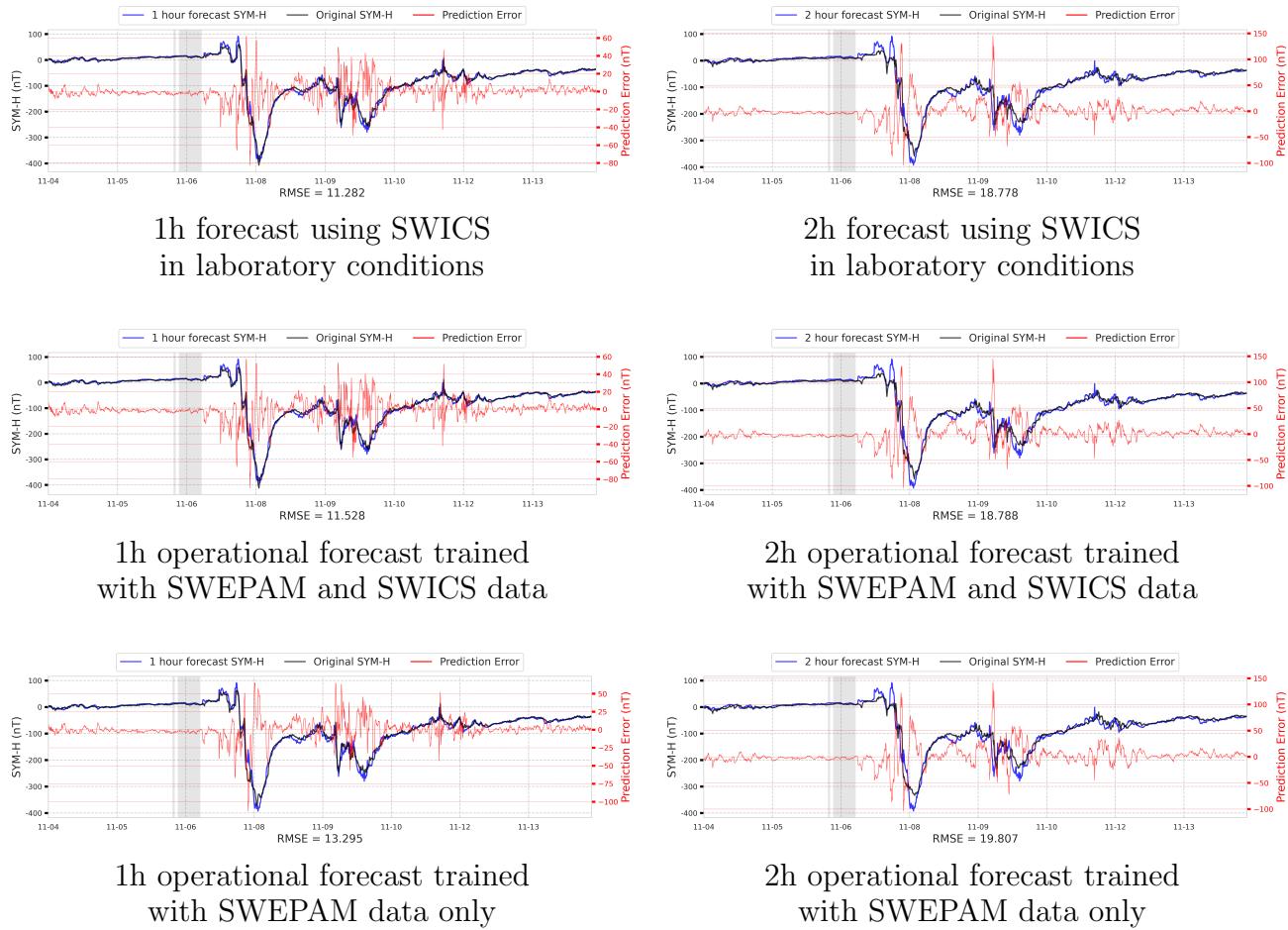


Table S12. Predictions for Storm Number 37 – November of 2004

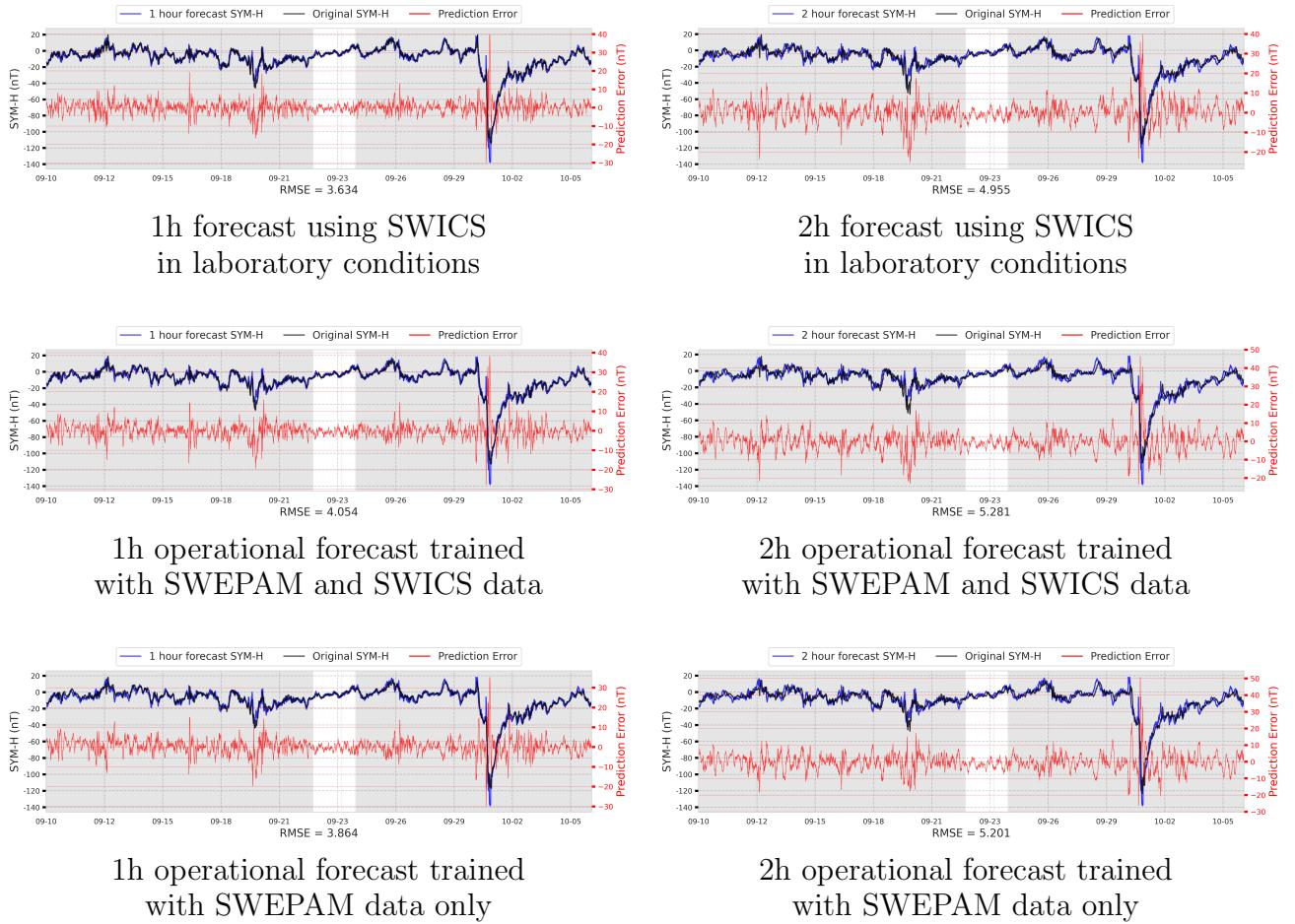


Table S13. Predictions for Storm Number 38 – September of 2012

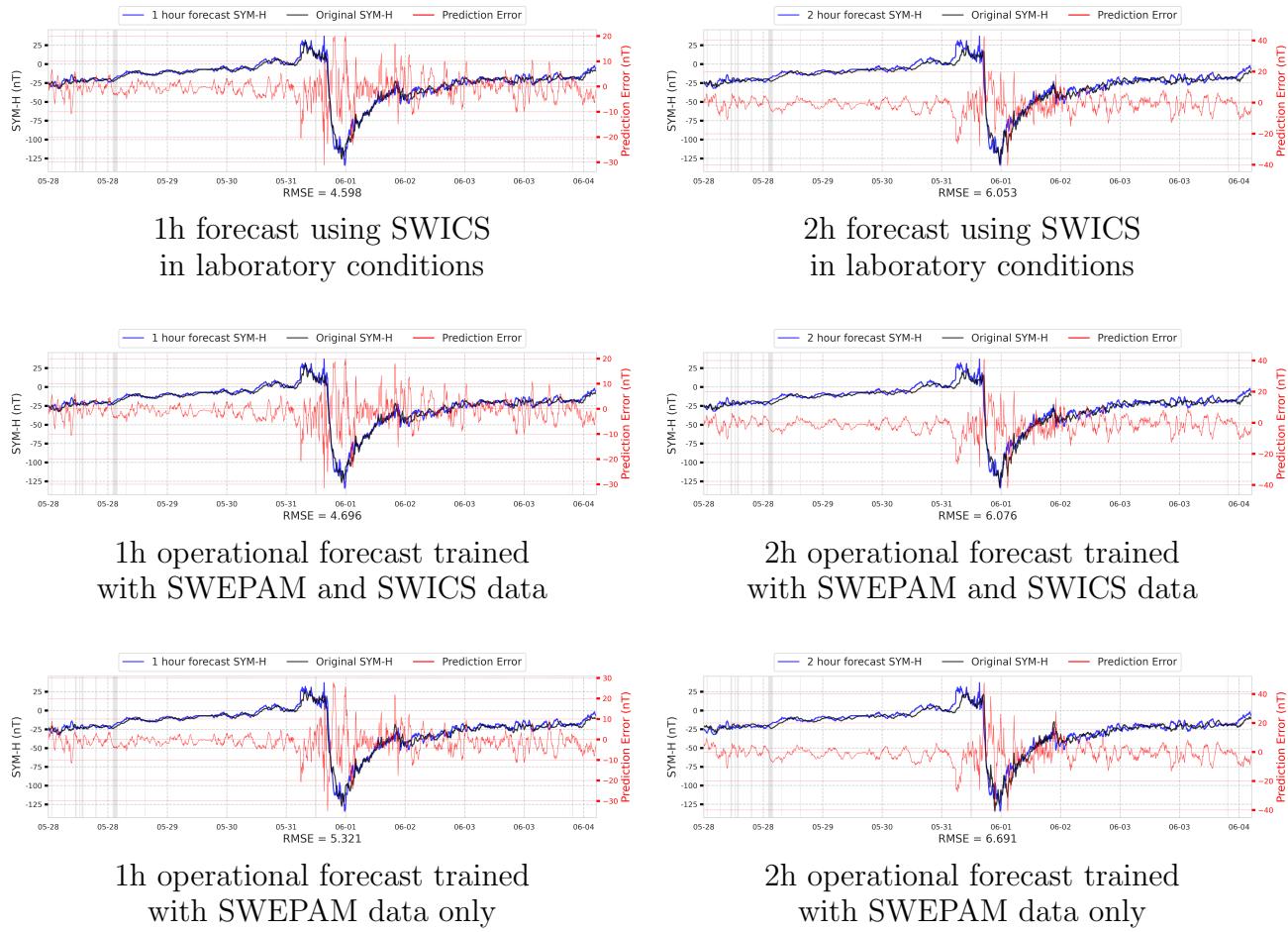


Table S14. Predictions for Storm Number 39 – June of 2013

June 26, 2023, 12:25pm

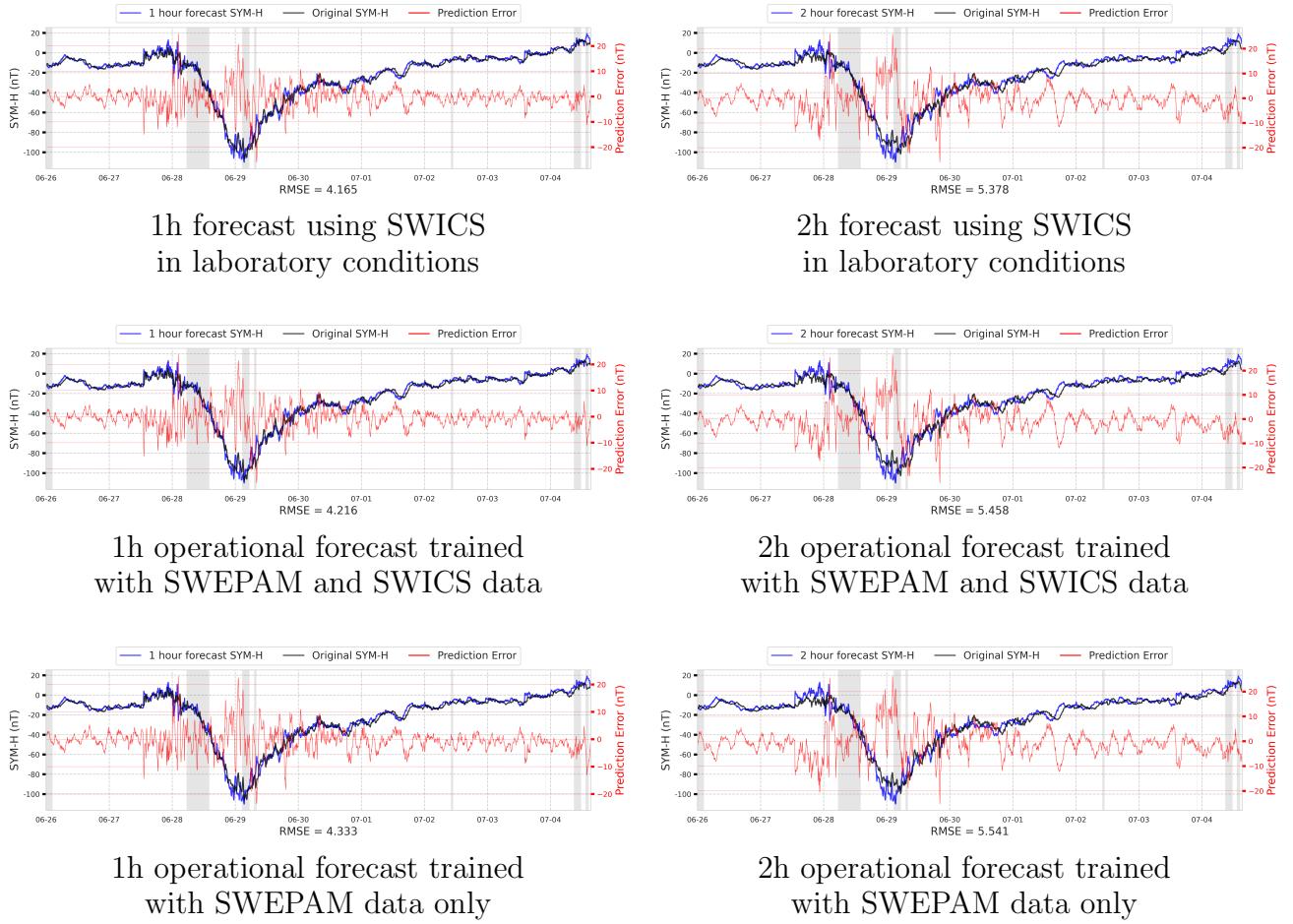


Table S15. Predictions for Storm Number 40 – June of 2013

June 26, 2023, 12:25pm

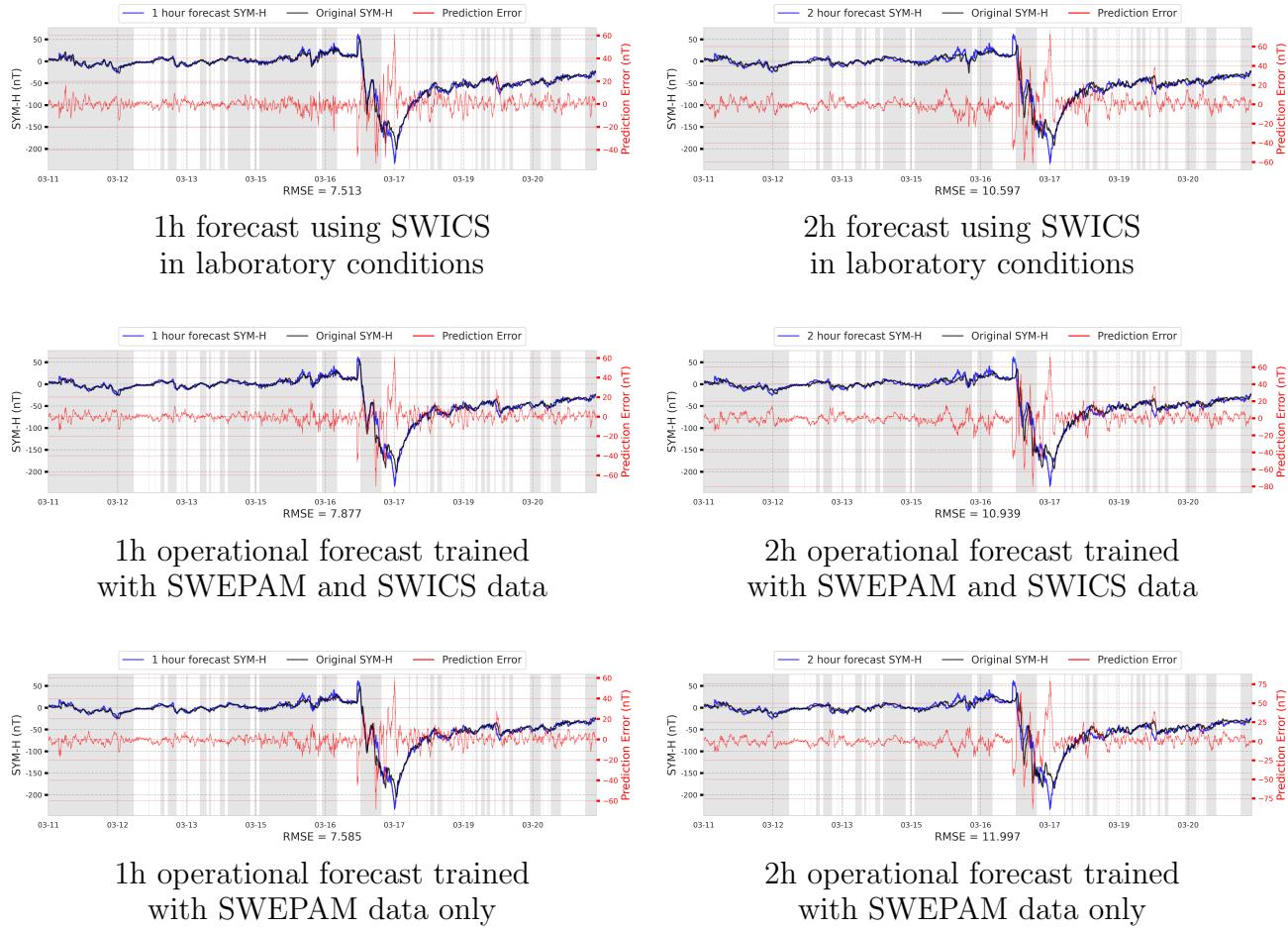


Table S16. Predictions for Storm Number 41 – March of 2015

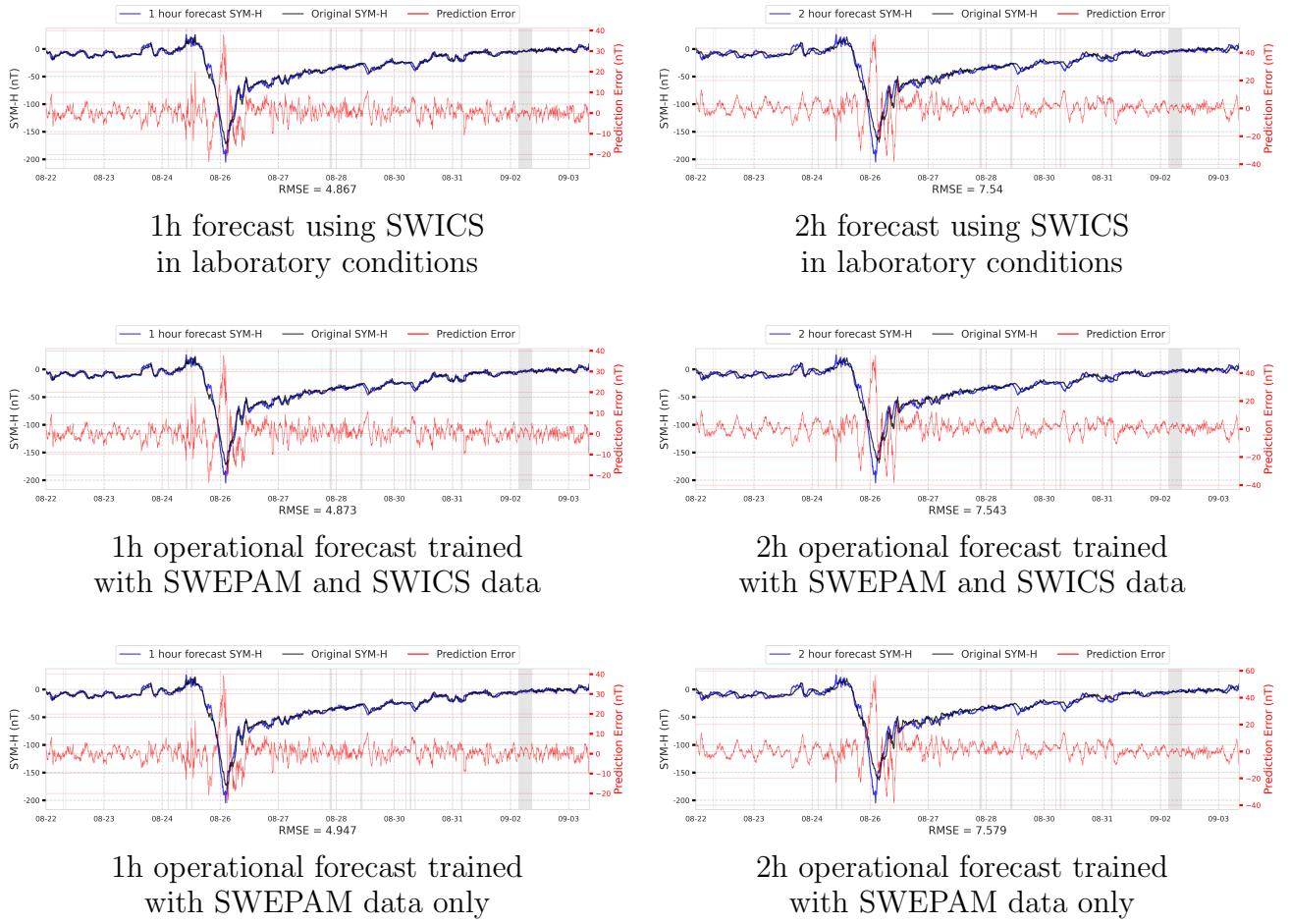


Table S17. Predictions for Storm Number 42 – August of 2018