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## Report of atmospheric electric field observation in Shonai area and calibrations for the observations

Shingo Nagamachi<sup>1\*</sup>, Yasuhiro Minamoto<sup>1</sup>, Masahide Nishihashi<sup>2</sup>, Kennichi Kusunoki<sup>3</sup>, Keiji Adachi<sup>4</sup>

<sup>1</sup>kakioka magnetic observatory, <sup>2</sup>Alpha-denshi Co.,Ltd./MRI, <sup>3</sup>Meteorological Research Institute, <sup>4</sup>East Japan Railway Company

### 1. Introduction

The Electric Field Mill (EFM) measures atmospheric electric field of local area which is disturbed by landform, structures or the instrument itself. Furthermore each EFM has different sensitivity respectively.

We installed EFM at five observation sites in Shonai area in order to for analyses and study of atmospheric electricity concerning to thunderclouds. In order to compare multi-point observation data, calibrations of EFMs are required. We report the method of the calibrations to enable the comparison in this presentation.

### 2. Sensitivity calibration

We made large size parallel flat condenser which can install EFM in Kakioka magnetic observatory. We calculated out reduction factor from given voltage of electricity to the instrument by the parallel flat condenser and output of the FEM.

### 3. In situ calibration

To correct difference of output due to environment around observation point, we took in situ calibration at each site. We installed the EFM in a pit near by the continuous observation point and adjusted the position of electrodes to ground level. Reduction factor at the point is calculated from output of the EFM in the pit and output of the continuous observation.

### 4. Conclusion

Reduction factors for comparison among multi-point observation data are induced. However, we afraid that variations of atmospheric electric field at some points were too small to derive feasible reduction factors. Because changes of atmospheric electric field during thunder clouds passing, and reduction factors obtained under sharp fluctuating atmospheric electric field are more reliable than that obtained under calm conditions. We will inspect the adequacy of those reduction factors.