

## Solar 27-day rotational period detected in a wide-area lightning activity in Japan

\*Hiroko Miyahara<sup>1</sup>, Toshio Terasawa<sup>2</sup>, Ryuho Kataoka<sup>3</sup>, Mitsuteru Sato<sup>4</sup>, Yukihiro Takahashi<sup>4</sup>

1. Humanities and Sciences/Museum Carriers, Musashino Art University, 2. RIKEN, 3. National Institute of Polar Research, 4. Hokkaido Univ.

A signal of the 27-day solar rotational period is often observed in cloud and lightning activities over the globe. Here we provide evidence of the 27-day periodicity of lightning activity in Japan using daily observational records of lightning for AD1989–2015. The 27-day period is detected only in a wide-area lightning activity over more than a few hundred thousand square kilometers. The 27-day signal is more prominent around the maxima of solar decadal cycles.

Keywords: Solar forcing of climate, Lightning activity, Solar rotational period