

Correlation between the density variation of the Dome Fuji (Antarctica) shallow ice cores and the sunspot number

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We measured the density profile of the Dome Fuji (Antarctica) shallow ice cores by the X-ray transmission method. The density profile with the spatial resolution of 1 mm was obtained continuously from near the surface to 40 m depth. We compared the density variation profile of the Dome Fuji shallow ice core and the sunspot number profile and found a correlation between them. Then, we carried out Fourier analyses of the density variation profile. We observed peaks around 10 years, which almost agrees with the periodicity of the sunspot number variation, about 11 years. These results suggest that densification process of the Dome Fuji shallow ice cores was affected by the solar activity.