

## Milankovitch cycles detected from bedded chert sequence, Inuyama area, Mino Terrane, and cyclostratigraphy

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Rhythmical bedding driven by Milankovitch cycles lies in its potential tool as a high-resolution stratigraphy; cyclostratigraphy. It is, however, still controversial whether Milankovitch forcing drove the sedimentary rhythms of bedded chert, which consists of rhythmically alternating chert (mainly biogenic Si in origin) and shale beds (mainly aeolian dust in origin), or not. This issue has remain problems about the methods and interpretations. In order to demonstrate that the sedimentary rhythms of bedded chert have driven by Milankovitch cycles, spectral analysis of the chert and shale beds thickness was carried out. For this purpose, I first established high-resolution and continuous lithostratigraphy of the middle Triassic bedded chert sequence based on the detailed geologic survey. Then, I estimated the average duration of 1 chert-shale couplet, which is ca. 20 ky close to the periodicity of precession cycle. Spectral analysis of chert and shale bed thickness was conducted based on an assumption that 1 chert-shale couplet represents ca. 20 ky precession cycle, based on the age model of radiolarian biostratigraphy. The result of spectrum analysis of chert bed thickness revealed ca. 5 beds, 20 beds and 200 beds cyclicities and the amplitude modulation of ca. 5 and 20 beds with the periodicity of ca. 20 and 120 beds that corresponds to ca. 0.1 Myr, 0.4 Myr and ca. 3.5 Myr amplitude modulation of precession cycles, and 0.4 Myr and ca. 2.4 Myr amplitude modulation of precession cycles, respectively. Additionally, the result of spectrum analysis of shale bed thickness also revealed ca. 20 beds cycle that corresponds to 0.4 Myr amplitude modulation of precession cycle. These results strongly support the idea that the cycles observed in the middle Triassic bedded chert sequence are driven by Milankovitch cycle. We will discuss the possible linkage between sedimentary rhythms of bedded chert and paleoclimate change. Consequently, we established cyclostratigraphy of the middle Triassic bedded chert sequence based on the ca. 20 beds cycle that corresponds to 0.4 Myr eccentricity cycle.