

# **Six-year Longitudinal Changes of EEG Spectral Characteristics of a Healthy Older Individual**

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This paper aims to introduce a longitudinal resting-state EEG dataset contributed by a healthy older individual who aged from 82.6 to 89.3. The dataset consists of 188 sessions of resting-state eyes-open and eyes-closed recording, recorded largely on a weekly basis spanning over 6 years, albeit a 2-year gap in the midst. Preliminary analyses were done on investigating the age-related changes of conventional spectral characteristics including absolute and relative band power. The results were also compared to a group of older individuals. Through the longitudinal data, we found increased delta, theta and alpha absolute power with advancing age, with little changes in the higher frequency oscillatory power. Interestingly, these changes in absolute power might indirectly lead to the changes in relative power in other bands (e.g., gamma). Such relationships cannot be derived from the group-level data. Lastly, the individual- and group-level data showed opposite findings, suggesting a possibility that the spectral features exhibit nonlinear trajectories in the older age range.