DATA RECORDING APPARATUS AND METHOD

ABSTRACT OF THE DISCLOSURE

For recording data into a disc-like recording medium without any lower linear density in data tracks in the lead-out zone even in the CAV mode, a radial position on the recording medium of an n-th one of the sectors is calculated to generate a position information; a write frequency is determined based of the position information; a number of bits which are to be recorded into the n-th one of the sectors is calculated based on a following expression (1):

$$\frac{F}{2\pi \cdot N} \cdot \frac{2\pi}{P}\left(\sqrt{R_0^2 + \frac{PL}{\pi}(n+1)} - \sqrt{R_0^2 + \frac{PL}{\pi}n}\right) \quad \text{.....} \quad (1)$$

where F : Write frequency, Hz

N : Spinning speed of the recording medium, s^{-1}

R_0 : Radius of innermost data track on which the bits are to be recorded, m

P : Track pitch of data tracks, m

L : Physical circumferential length of each sector, m; and a data in the number of bits calculated based on the expression (1) is recorded into the recording medium on the basis of the write frequency.