Diatom 21: 135-141 (英文)
有田重彦・大塚泰介：円弧構成モデルによる羽状目珪藻の殻外形の記述
〒525-0001 滋賀県草津市下物町 1091 たんさいぼうの会 (琵琶湖博物館はしかけ)
Shigehiko Arita and Taisuke Ohtsuka : Describing the valve outlines of pennate diatoms using the arc-constitutive model
Tansaibo-no-kai, "Hashikake" system in Lake Biwa Museum, Oroshimo 1091, Kusatsu, Shiga 525-0001, Japan

Abstract

Valve outlines of 30 species of pennate diatoms from Lake Biwa were described by the arc-constitutive model advocated by Arita & Ohtsuka (2004). The model designs the valve outline as a combination of arc (including line) segments that are connected each other by a common tangential. The model described well all of the valve outlines examined, suggesting the versatility of the model for describing a variety of pennate diatoms. When symmetry was assumed, the model could express the valve outline with an adequately small number of free parameters. The number of free parameters necessary for describing outlines was 5-7 for biaxially symmetric valves, 7-13 for single-axially symmetric valves, but 9-39 for "broken-symmetric" valves.
Key index words : arc-constitutive model, free parameter, pennate diatoms, symmetry, valve outlines

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