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A Manual of
Lake Morphometry

With 49 Figures

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SYMBOLS AND ABBREVIATIONS

A	the total area, i.e. the lake area plus the area of islands, islets and rocks (km ²);
A _i	the total area of islands, islets and rocks within the shoreline (km ²);
a	the lake area (km ²);
a _i	the total area (= the cumulative area) within the limits of the contour line l _i (km ²);
a'	10 ⁵ · log A;
a''	the area between two given contour lines (km ²);
\bar{B}	the mean width (km);
B _e	the maximum effective width (km);
B _{max}	the maximum width (km);
C	concave lake form;
CTP	checkered transparent paper, method for determining, e.g. the shoreline length;
Cx	convex lake form;
\bar{D}	the mean depth (m);
D _{max}	the maximum depth (m);
D _r	the relative depth (%);
D ₂₅	the 1:st quartile depth (m);
D ₅₀	the 2:nd quartile depth or the median depth (m);
D ₇₅	the 3:rd quartile depth (m);
E	the area error (km ²);
e	the base for natural logarithms (= 2.718);
F	the shore development;
f(\bar{x})	the mean lake form;
f(0.5), f(2.0) etc	the statistical deviation forms from the mean lake form;
I	the information value of the bathymetric map;
I _n	insulosity (%);
I'	correctly identified area in the bathymetric map;
I''	the information number of the bathymetric map, which depends on the number of contour lines (n);
k	the normalized correction factor;
kHz	kilohertz; the frequency of the echosounder;
K ₁	log(s + a') for s = 1, the reference scale;

K_2 $\log(s + a')$ for $s = 6\ 000\ 000$, the scale constant;
 L linear lake form;
 L^+ the total estimated length in km of all contour lines in the bathymetric map;
 L_e the maximum effective length (km);
 L_f the effective fetch (km);
 L_{max} the maximum length (km);
 L_R a measure of the intensity of the hydrographic survey (km);
 L'_R the uncorrected L_R -value;
 L_S the effective length (km);
 l_0 the shoreline length (km);
 l'_0 the scale dependent l_0 -value;
 l the total length of the contour lines in the bathymetric map (km);
 l_c the contour-line interval (m);
 l_i the length of a given contour line in the bathymetric map (km);
 l_i^+ the estimated length in km of the given contour line (l_i);
 l_x the real length along the echoprofile in the x-direction;
 l_y the real length along the echoprofile in the y-direction;
 ma (macro), label for lakes with no point of inflexion in the relative hypsographic curve;
 me (meso), label for lakes with one point of inflexion in the relative hypsographic curve;
 mi (micro), label for lakes with two or more points of inflexion in the relative hypsographic curve;
 n the number of contour lines in the bathymetric map;
 n' the number of necessary determinations with CTP-technique to obtain, e.g. the shoreline length with a given statistical certainty;
 R the lake bottom roughness;
 R' the lake bottom roughness;
 S the map scale, e.g. 1:50 000, 1:100 000;
 S' the scale factor, e.g. $S' = 2.5$ for $S = 1:250\ 000$ and $S' = 5.0$ for $S = 1:500\ 000$;
 SCx slightly convex lake form;
 s the scale factor, $s = 1/S$;
 s_i the straight-line length of a given echosounded track (km);
 s_n the total length of all echosounded tracks (s_i) in a lake (km);

s_x	the total straight-line length of all echosounded tracks in the x-direction (km);
s_y	the total straight-line length of all echosounded tracks in the y-direction (km);
V	the lake volume (km ³);
VCx	very convex lake form; ,
V_d	the volume development;
V_1	the linear approximation of the lake volume (V);
V_p	the parabolic approximation of the lake volume (V);
W_{0-1}	the water content of surficial sediment (0-1 cm), given in percentage of the wet substance;
α	the slope;
α°	the slope in degrees;
α_p	the slope in %;
$\bar{\alpha}_p$	the mean slope of a lake (%);
α_{50}	the median slope of a lake;
β_i	the acute angle between echosounded tracks;
γ_i	a given deviation angle from the central radial; formula (8) for calculations of the effective fetch;
π	3.1416.