A DOS PROGRAM FOR SUPPORTING MODAL ANALYSIS OF ROCKS (MOD_EL v. 2.12)

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Modal analysis is a basic petrographic method for determination of mineralogical composition and grain-size distribution of rocks. Two types of data series can be obtained by this method: (1) relative quantity of rock forming minerals, and (2) grain-size distribution of the studied rock. Moreover, using an appropriate method, grain-size distribution of the main mineral components can be also determined. This way, further petrological conclusions (such as classification of the texture, distinction of rock varieties and facies, etc.) can be drawn. Any method of the modal analysis should satisfy three principal requirements: (1) appropriate accuracy, (2) simplicity, and (3) speed.

Amongst methods of modal analysis (CHAYES, 1956) the authors regard the classic Rosiwal's method (ROSIWAL, 1898) – measuring along the line – as the most efficient. First, this method does not require special equipment, and second, relative quantity of the rock forming minerals as well as grain-size distribution can be simultaneously determined. Moreover, in the case of necessary measurements its accuracy is acceptable (JÁRAI *et al.*, 1997). However, a relatively long line has to be measured, and large amount of data has to be evaluated to obtain precise results.

MOD_EL v. 2.12 software package introduced by this paper is able to use data recorded in simple text and special XLS (MS-Excel) file formats, and to evaluate these data statistically. It gives the minimal measuring length for the required accuracy, and compiles tables and graphs for representing the results of the measurement. Minimal hardware and software requirements are to run the software: AT 386 compatible computer with (4 MB RAM, 20 MB hard disk space, monochromatic monitor, MS-DOS 5.5 operation system. Of course, MOD_EL v. 2.12 runs on Windows OS (Windows 9x/NT/2000), too. Both English and Hungarian versions are available. As a final result, the program lists the grain-size and mineral components data in a summarized table, and makes grain-size distribution curves (Fig. 1).

Acknowledgement

References

CHAYES, F. (1956): *Petrographic Modal Analysis.* John Wiley and Sons Inc., New York. 113 pp.

JÁRAI, A., KOZÁK, M. & RÓZSA, P. (1997). Math. Geol., 29/8: 977–991.

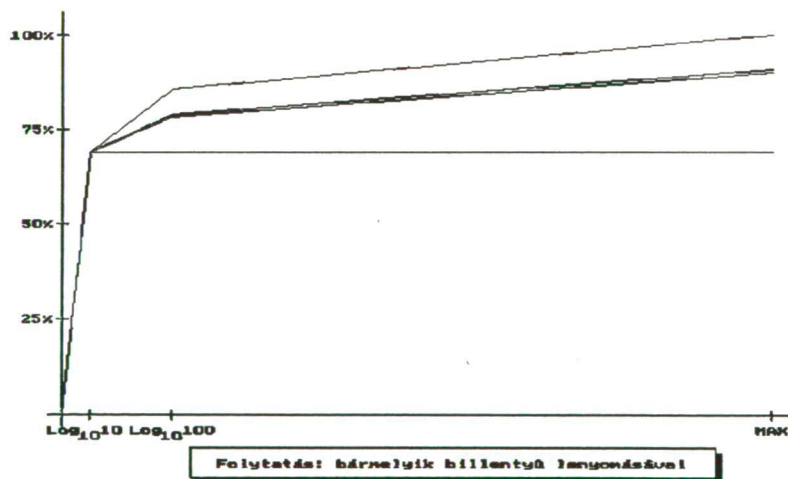ROSIWAL, A. (1898). Verh. der k. k. Geol. Reichanstalt, Wien, 5–6: 143–175.

Fig. 1: Grain-size distribution curves drawn by MOD_EL v. 2.12 program.