

- Sea water, Final Report, IAEA Research Contract RC 7337/RB.
11. Östlund, H. G. (1974) Expedition Odysseus 65: Radiocarbon Age of Black Sea Water, in: *The Black Sea - Geology, Chemistry and Biology*, E.T. Degens and D. Ross (editors), The American Association of Petroleum Geologists, Memoir No. 20.
 12. Östlund, H. G. and D. Dyrssen, (1986) Renewal Rates of the Black Sea Deep Water, in: *The Chemical and Physical Oceanography of the Black Sea*, Univ. of Göteborg, Rep. on the Chemistry of the Sea XXXIII. Presented in the Meeting on the Chemical and Physical Oceanography of the Black Sea, Göteborg, Sweden, June 1986.
 13. Özsoy, E., Z. Top, G. White, J. W. Murray, (1991). Double Diffusive Intrusions, Mixing and Deep Sea Convection Processes in the Black Sea, in: *The Black Sea Oceanography*, E. İzdar and J. M. Murray (editors), NATO/ASI Series, Dordrecht, Kluwer Academic Publishers, 17-42.
 14. Özsoy, E., Ünlüata, Ü. and Z. Top. (1993). The Mediterranean Water Evolution, Material Transport by Double Diffusive Intrusions, and Interior Mixing in the Black Sea, *Prog. Oceanogr.*, **31**, 275-320.
 15. Özsoy, E. and Ş. Beşiktepe, (1995). Sources of Double Diffusive Convection and Impacts on Mixing in the Black Sea, pp. 261-274, in: Brandt, A. and H. J. S. Fernando (editors), *Double-Diffusive Convection*, Geophysical Monograph 94, American Geophysical Union, 334 pp.
 16. Özsoy, E. Salihoğlu, İ., Rank, D., and D. Can (1997). Measurement of Selected Isotope Tracers in the Black Sea and the Sea of Marmara, Report for the Coordinated Research Programme "The Application of Tracer Techniques in the Study of Processes and Pollution in the Black Sea", submitted to the IAEA, Institute of Marine Sciences, METU, Erdemli, İçel.
 17. Özsoy, E. and Ü. Ünlüata (1997). Oceanography of the Black Sea: A Review of Some Recent Results, *Earth Sci. Rev.*, **42**(4), 231-272.
 18. Özsoy, E. and Ü. Ünlüata (1998). The Black Sea, in: A. R. Robinson and K. Brink (editors), *The Sea*, **11**, Wiley Interscience (in press).
 19. Rank, D. (1992). The Danube as a Main Input to the Black Sea: Isotope Ratios and Radioactivity, in: Fabry and Fröhlich, The Application of Tracer Techniques in the Study of Processes and Pollution in the Black Sea, Consultants' Meeting Report, International Atomic Energy Agency, p. 27.
 20. Rank, D. (1995). Umwelttritium im Donaauraum, *Limnologische Berichte Donau* 1994 (Editor: Internationale Arbeitsgemeinschaft Donauforschung), Dubendorf/Wien, **II**, 243.
 21. Rank, D. (1996). Die Isotopenverhältnisse im Donauwasser als Indikatoren für Klimaschwankungen im Einzugsgebiet, *Limnologische Berichte Donau* 1996 (Editor: Internationale Arbeitsgemeinschaft Donauforschung), God/Vacratot, Hungary (in press).
 22. Swart, P. K. (1991a). Factors Affecting the Oxygen Isotopic Composition of the Black Sea, *The Black Sea Oceanography*, E. İzdar and J. M. Murray (editors), NATO/ASI Series, Dordrecht, Kluwer Academic Publishers, 75-88.
 23. Swart, P. K. (1991b). The Oxygen and Hydrogen Isotopic Composition of the Black Sea, *Deep-Sea Res.*, **38**, Suppl. 2, S761-S772.
 24. Top, Z., Östlund, H. G., Pope, L. and C. Grall (1991). Helium and Tritium in the Black Sea: A Comparison with the 1975 Observations, *Deep Sea Res.*, **38**, Suppl. 2, S747-S760.
 25. Ünlüata, Ü., T. Oğuz, M. A. Latif and E. Özsoy (1990). On the Physical Oceanography of the Turkish Straits, in: *The Physical Oceanography of Sea Straits*, L. J. Pratt (editor), NATO/ASI Series, Kluwer, Dordrecht, 25-60.

LONG-TERM V CONDITIONS I

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Abstract. Climat
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1. Introduction

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The present pa
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2. Data and metho

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