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| Nota di contenuto | Frontmatter -- CONTENTS -- ABSTRACT -- ACKNOWLEDGMENTS -- 1. INTRODUCTION -- 2. PROCESSES CONTROLLING THE CARBON BALANCE IN THE UPPER OCEAN -- 3. CONSTRAINING CARBON BUDGETS BY CONCURRENT MEASUREMENTS OF DIC AND $\delta^{13}\text{C}$ -- 4. SEASONAL OBSERVATIONS -- 5. HARMONIC FITTING -- 6. DESCRIPTION OF THE SEASONAL MODEL -- 7. RESULTS OF THE SEASONAL MODEL -- 8. DISCUSSION -- 9. SUMMARY AND CONCLUSIONS -- REFERENCES -- APPENDIX A: FORMULAS FOR THE SEASONAL MODEL -- APPENDIX B: THREE-DIMENSIONAL GLOBAL OCEAN TRACER TRANSPORT MODEL OF BACASTOW AND MAIER-REIMER (1991) -- APPENDIX C: SENSITIVITY TESTS -- TABLES -- FIGURES |
| Sommario/riassunto | Each year, the concentration of dissolved inorganic carbon (DIC) in the mixed layer at Station S in the Sargasso Sea decreases from winter to summer by about 30 umol/kg. The authors of this study demonstrate that by simultaneously observing changes in the stable isotopic ratio of DIC, it is possible to quantify the contribution of physical and biological processes to this summer-fall drawdown. They find that |

biology is the dominant contributor to the drawdown, but that physical processes also play an important role.
