



Burying Carbon Dioxide

One possible way (along with improving energy efficiency and finding alternate fuels) to deal with the huge amount of carbon dioxide going into the atmosphere is *carbon sequestration*: burying CO_2 thousands of feet underground in old or unusable reservoirs, before it is emitted. Naturally geology is involved, but so too is mathematics. Linear algebra, numerical analysis, and partial differential equations underlie the models that combine with small-scale experiments to predict the extent of underground leakage and help determine the feasibility of carbon sequestration.

The mathematical models used to quantify the effects of carbon sequestration are broad in scope—accurate for the motion of CO_2 through tiny rock pores and in giant reservoirs, extending from minutes to centuries. The problem is a relatively new one in fluid dynamics on which many researchers are now working. Compounding the complexity of the problem are millions of wells that could provide an escape route for the gas. Said one researcher, “It’s the modeling problem of a lifetime,”—for her and for the planet.

For More Information: “Geosciences Conference Tackles Global Issues,” Barry Cipra, *SIAM News*, June 2007.

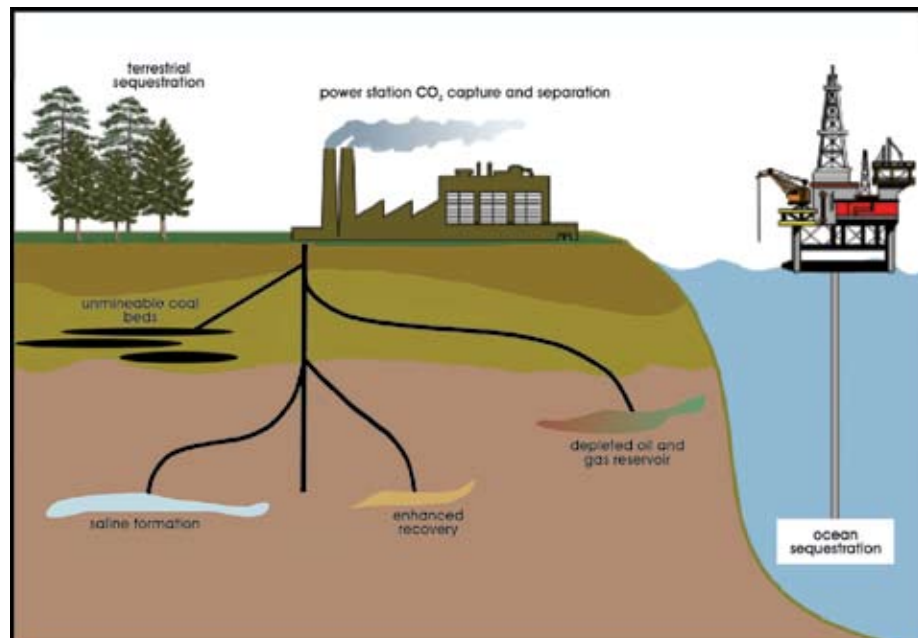


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