

**Dynamic balances in estuaries**  
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1. Salt Balance in Estuaries  
Basics, Knudsen Relation, brief mention of pumping, shear dispersion etc.
2. Momentum Balance  
particularly baroclinic pressure gradient, "lock exchange")
3. Simplifications  
Tidal averaging, drag coefficient, throwing out nonlinearities, etc.
4. Solutions to Combined Equations  
Hansen and Rattray, Chatwin, Schijf and Schonfeld, Keulegan, etc.
5. Real-world applications and examples  
James R., Hudson, Mississippi, Merrimack, ...