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**Time stepping in atmospheric models from explicit to  
implicit**

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This talk will present a review of the evolution of the time stepping methods in atmospheric models from the early operational models to the current unified models that are used both for operations and research. The primary motivation for change has been efficiency i.e. the computer time taken to complete a forecast or simulation at a given level of accuracy. Operations in national weather centers have strict time constraints and simulations for research must be done in finite time to be useful. The available computers at these centers are also part of the equation, and the future material is likely to influence the time stepping method of choice of the future.