EVAPORATION

The evaporation model in ADIOS 2 is a well-mixed pseudo-component model.

It is a bit simpler than what Jim Payne and Bruce Kirstein developed 20 years ago.

ADIOS 2

* 1. About 10 pseudo-components fabricated from distillation curves. Each component has vapor pressure, density, molar volume (matching normal alkanes by boiling point).

ADIOS 2

2. Instantanous evaporation of components are independent of each other:

$$\frac{dn}{Adt} = \frac{K(P_{sat}(T,t) - P_{ciir})}{RT}$$

Mass transfer coeff. is function of wind speed Raoult's law (ideal mix) -> $P_{sat} = \chi(t) P_{sat}^0(T)$ Mole fractions are spatially uniform

ADIOS 2

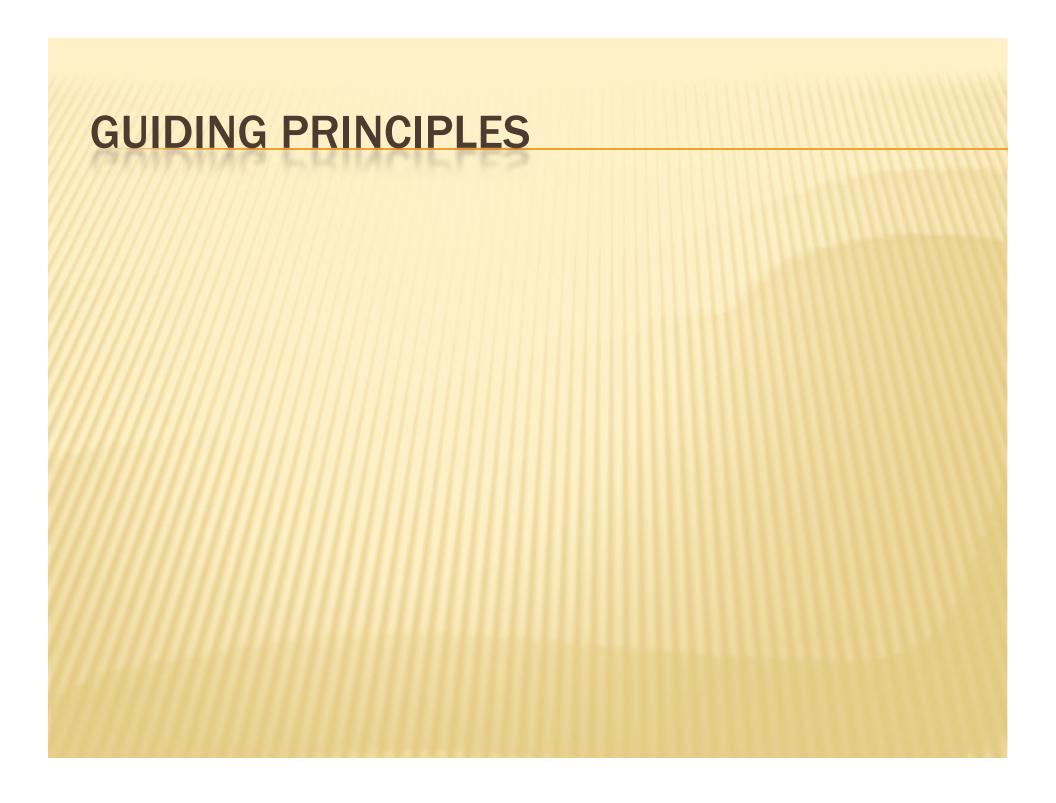
* 3. Flux equations are coupled through mole fraction terms and solved numerically

$$\frac{dn_i}{Adt} = \frac{n_i}{\sum_{i} n_i} \frac{K P_i^0(T)}{RT}$$

WHAT'S V

Are we smarter yet?

- Deepwater wells
- Climate change
- Technology and expectations
- Shrinking science staff



GUIDING PRINCIPLE 2

Minimal care and feeding +(KISS)

WHAT SHOULD WE DO

Initialize with available data

WHAT SHOULD WE DO

Compare output with measurements

WHAT SHOULD WE DO

× Set thickness limit in ADIOS 3

Address the limitations of the well-mixed assumption