

Mono Lake Continued

Adding in the specific gravity of water now gives us: $W(\text{end}) \approx 994 \text{ KAF}$. This is more accurate and we can use it to explore export policy to LA.

Sensitivity Analysis

If I have a lack of confidence in a component of the model (e.g., a parameter), one way to assess is via sensitivity analysis

Idea: Take a parameter r , vary this parameter around a window of values around r . For example, $r - 50\%$ to $r + 50\%$. (Whatever % makes sense in the context). Now, run the model across a set of runs, varying r throughout these values. Now, how does the model output respond to parameter variation?

- Wildly different \Rightarrow Value of r is important to the results
- No change at all \Rightarrow Value of r is not important, inaccuracy is not a huge concern

This is a great way to evaluate the impact of model uncertainty.

2D Flows

We have a number of approaches for 1 dimension systems, $\dot{x} = f(x)$, such as phase portraits, linear stability analysis, trajectories, etc.

Which of these approaches can be adapted to 2 dimensions? Consider $\dot{x} = f(x, y)$ and $\dot{y} = g(x, y)$



Now the phase portrait is a surface! This is challenging.

How do we find equilibria? Simultaneously solve:

$$\begin{aligned}f(x, y) &= 0 \\g(x, y) &= 0\end{aligned}$$