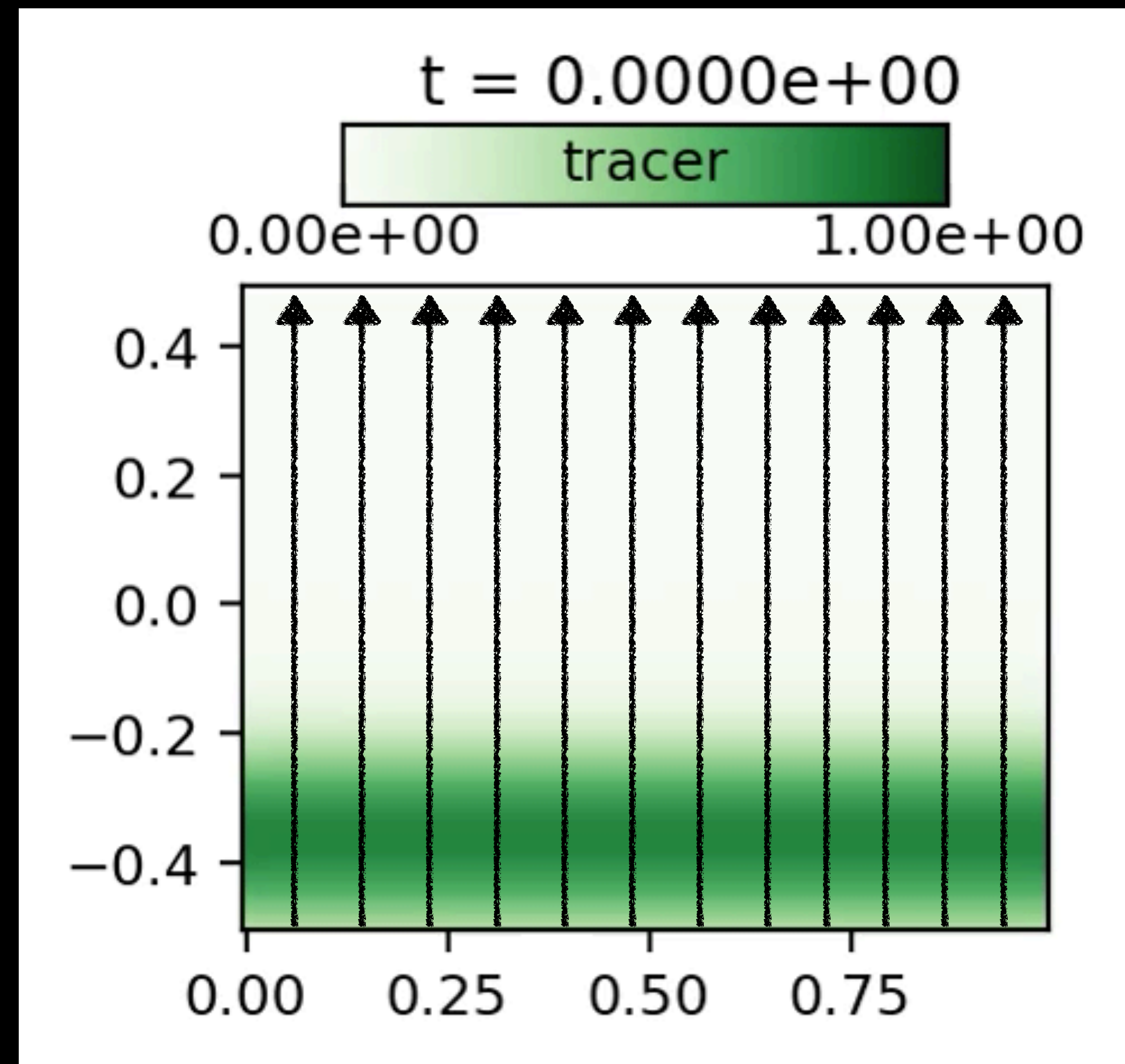
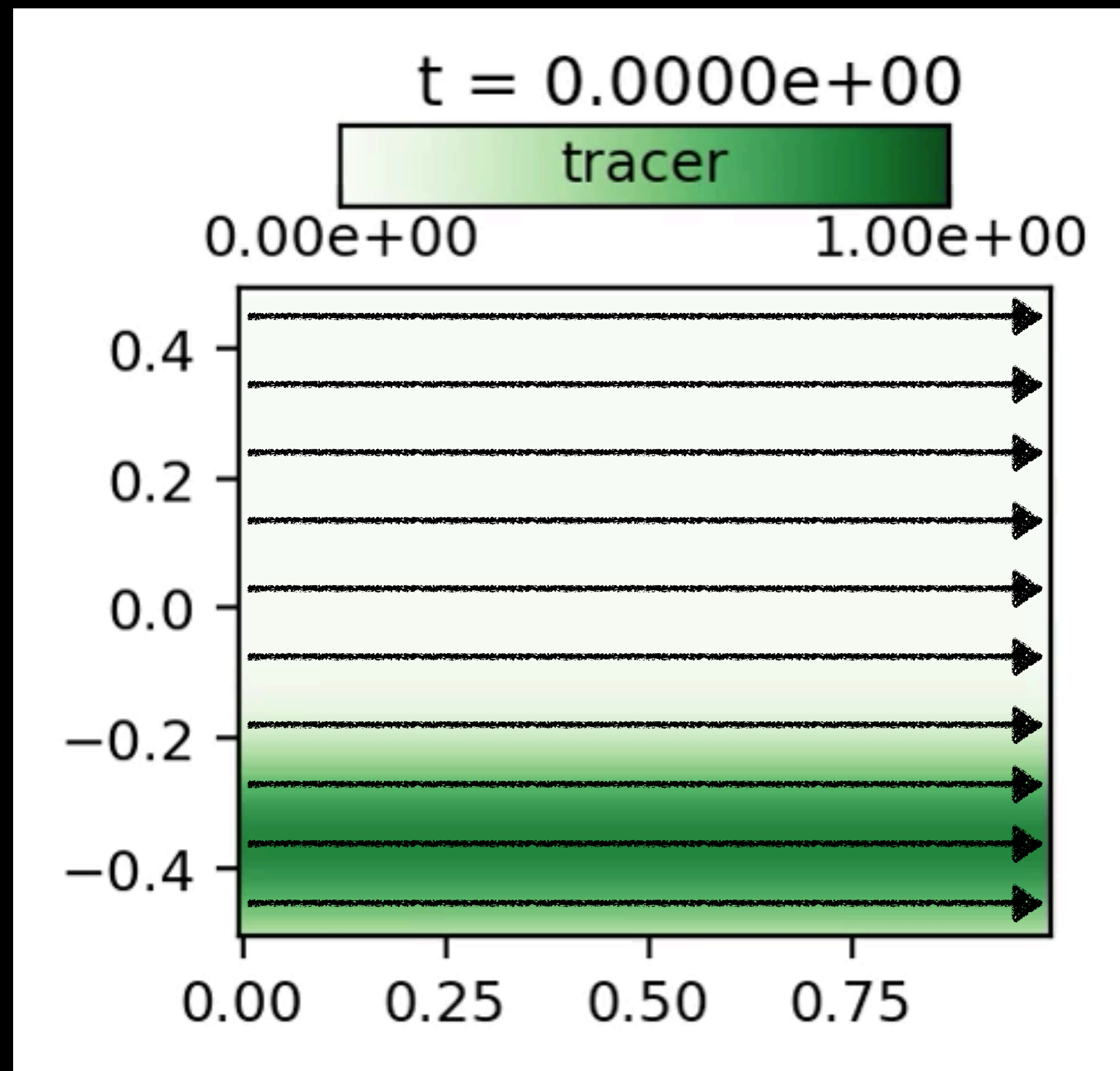


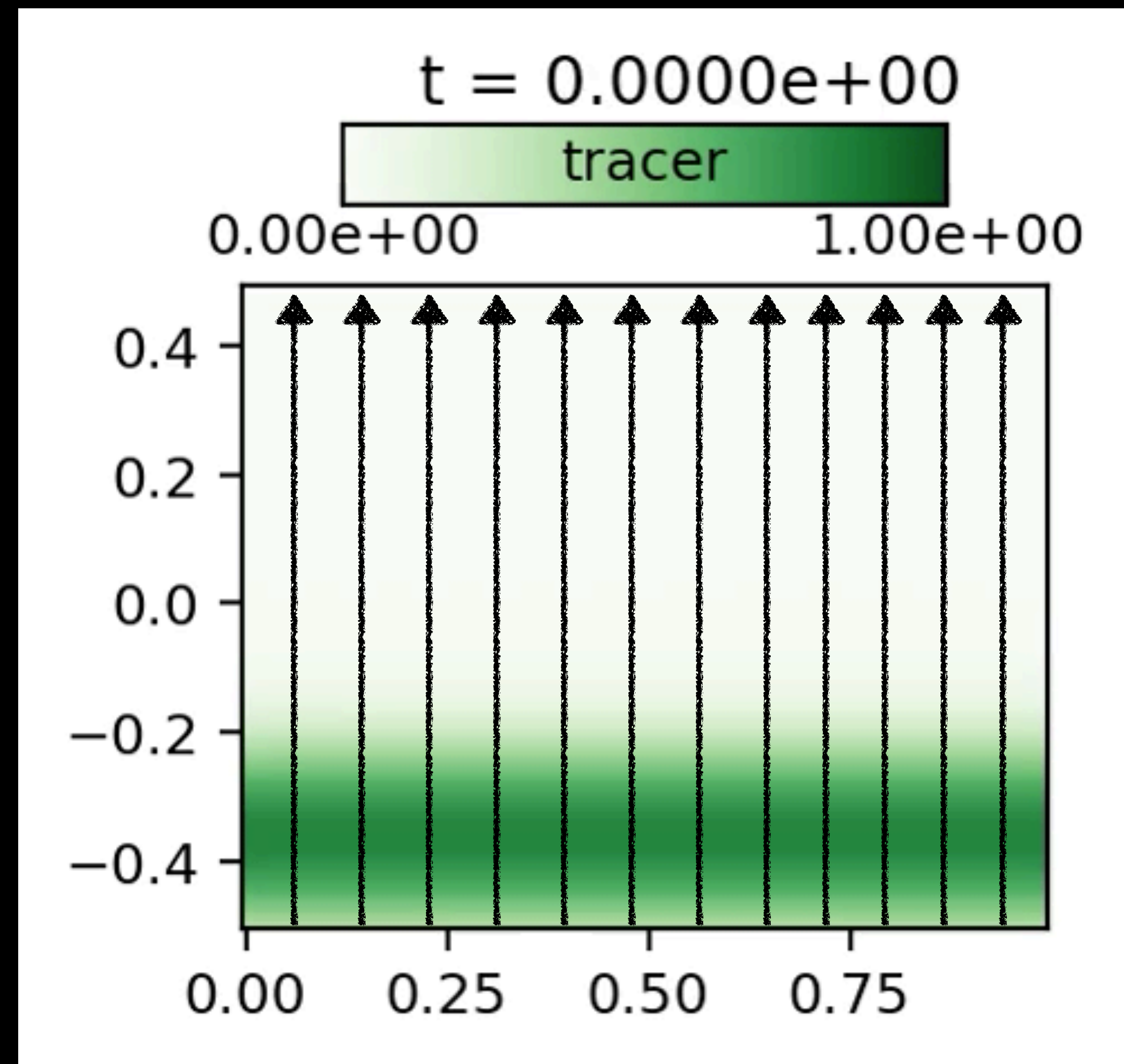
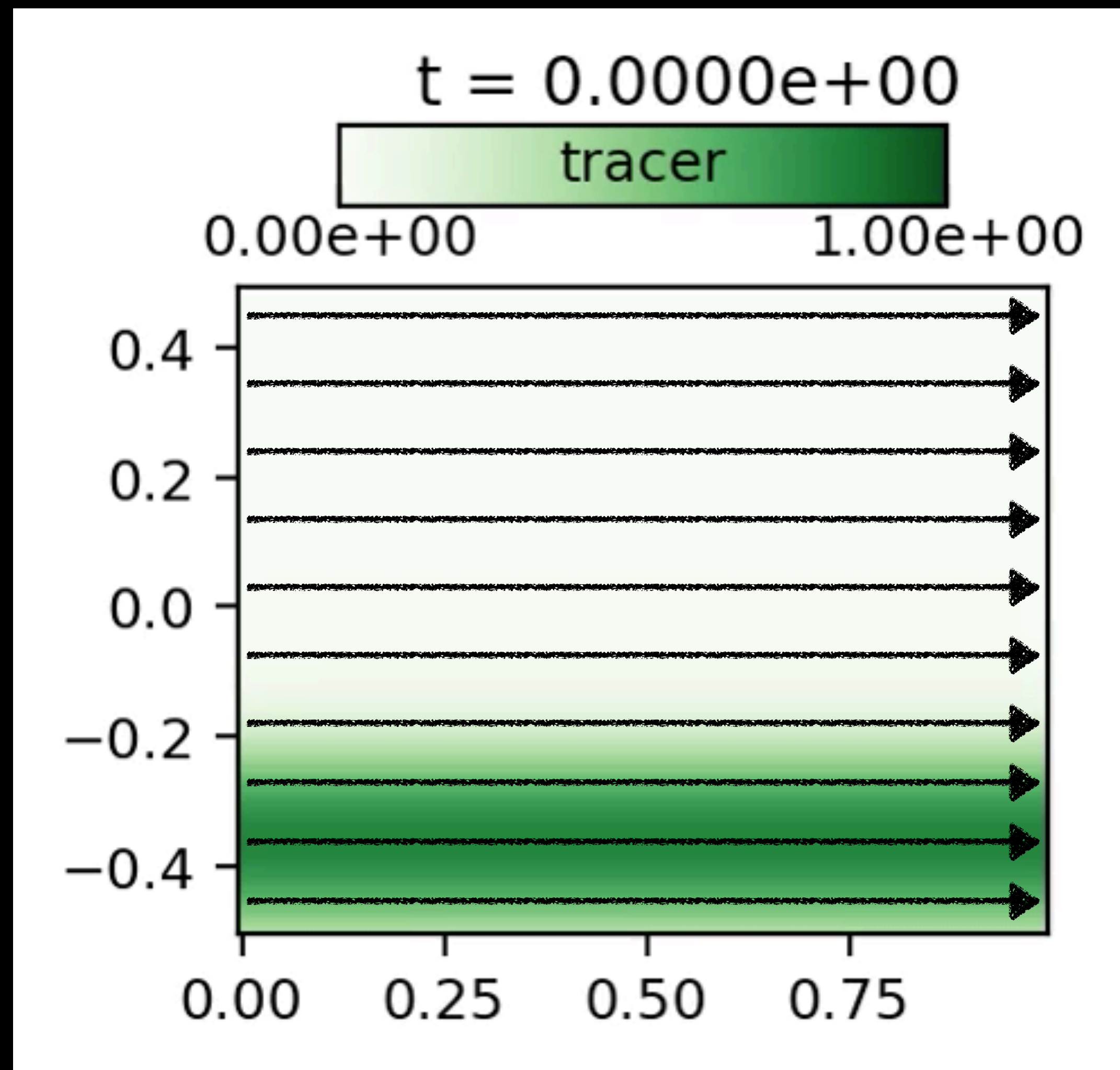
Some motivating gifs.



What will happen?



What will happen?



Why didn't the dye on the left move?

1. \overline{u} is slower on the left.
2. \overline{u} and ∇S are not aligned on the left.
3. $\nabla S = 0$ on the left.
4. When the dye on the left flows away, there's a source replenishing it.
5. None of the above.

$$\frac{DS}{Dt} = \frac{\partial S}{\partial t} + \overline{u} \cdot \nabla S$$

