when a is negative (e.g. a=-2), when t is reducing, the curve has the tendency of moving to the right. More accurately, the peak of curve is moving to the right direction after t decay to 0.6.

The reason is below:

To explain this phenomenon, we should keep our eyes on the point at the right of the peak.

We have formula:

we notice p0 is not influenced by the drift, since a is negative, p\_ is bigger and p+ is smaller. we name the point at the right of the peak as x+. when we calculate the f\_value at x+ and time k+1, the formula tells us now get more weight since p\_ is bigger, which is just the max f\_value at the peak at time k. As a result, x+ will become the next peak of the curve at time k+1, making the curve seems like moving to the right.

Another claim is when a becomes bigger (absolute value of a becomes bigger), the solutions decay faster. That is the curve moves faster when a=-10 than a=-2. To test this fact, we set a=-2, a=-5 and a=-10 and the results tell us the claim is true. The reason behind this is More particles hit the absorption boundaries at a early time no matter whether the drift is positive or negative (because particles move between two boundaries). In other words, E[T] becomes smaller.