



## **Alien Crab Monster IK System Explained:**

The IK system works relative to the actors slope rotation, and moves feet both up and down based on where they should be.

Virtually all other IK systems I have seen on the marketplace work assuming a flat surface, and only move feet upwards.

This is accomplished by having extra bones in my animation which store a world-space copy of where the foot bones should be without any modification to IK.

These bones had the foot animation baked in, and were attached to the root, not the legs.

These bones are used as as a reference to determine whether the foot should move up, down, or not at all.

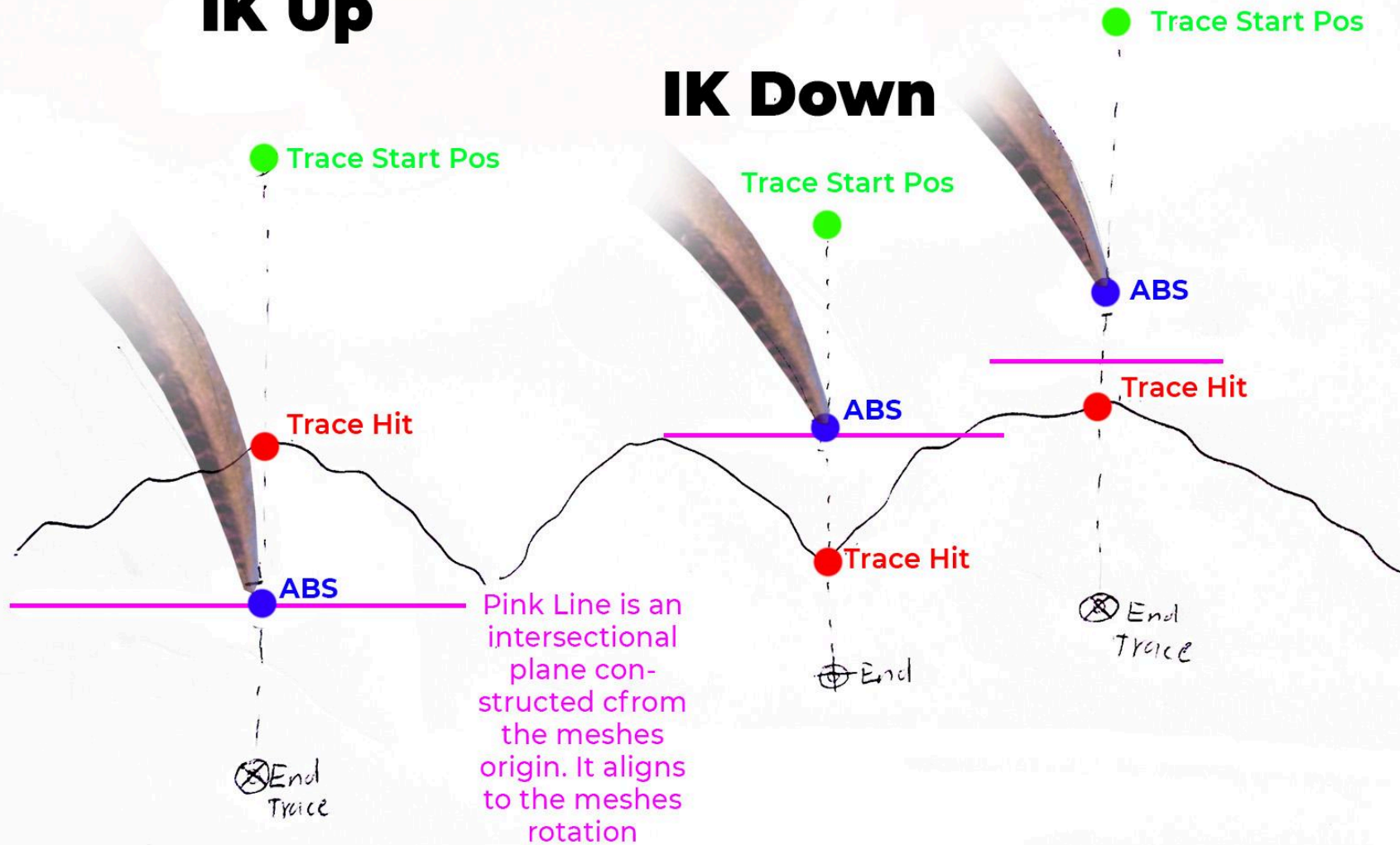
Please see the image on the page below for an explanation of how I determined this

The 'ABS' is the absolute world-space position of where the foot would have been if it wasn't modified to have IK enabled.

## No IK

## IK Up

## IK Down



If the **Trace Hit** is above the **Intersectional plane**, move the IK up.

If the **Trace Hit** is below the **Intersectional Plane**, and the **ABS** is level with the **Plane**, IK the foot down.

If the **ABS** is above **Intersectional Plane**, dont animate the IK - because the foot is trying to lift up and walk.