

Light Speed Tango

Suppose two friends, A and B , are fast walkers. One day, the two decide to synchronize their walking paces in their respective reference frames. They start walking directly away one another, facing backwards, starting from the same spot. They both walk at a relativistic speed c/k relative to the ground (some fraction the speed of light). When A sees B stomp his foot down, A simultaneously stomps her corresponding foot. Likewise, when B sees A stomp her foot, B simultaneously stomps his corresponding foot. On the n th step, how far away from each other are they?