Sagnac effect

The Sagnac effect was seen to verify the source-independence of the speed of light. But the physical setup is by far not as simple as thought:

- The distance of the mirror is not the same in both directions, as the mirrors itself are not circular but straight.
- The angle of reflection is not the same in both directions, as the light traveling in the same direction as the rotation is reflected slightly more inwards of the circle, and the light traveling in opposite direction as the rotation is reflected more outwards of the circle.

To simply assume that both light-rays in opposing directions have symetrical pathways is very wrong, as a simple geometrical consideration shows:

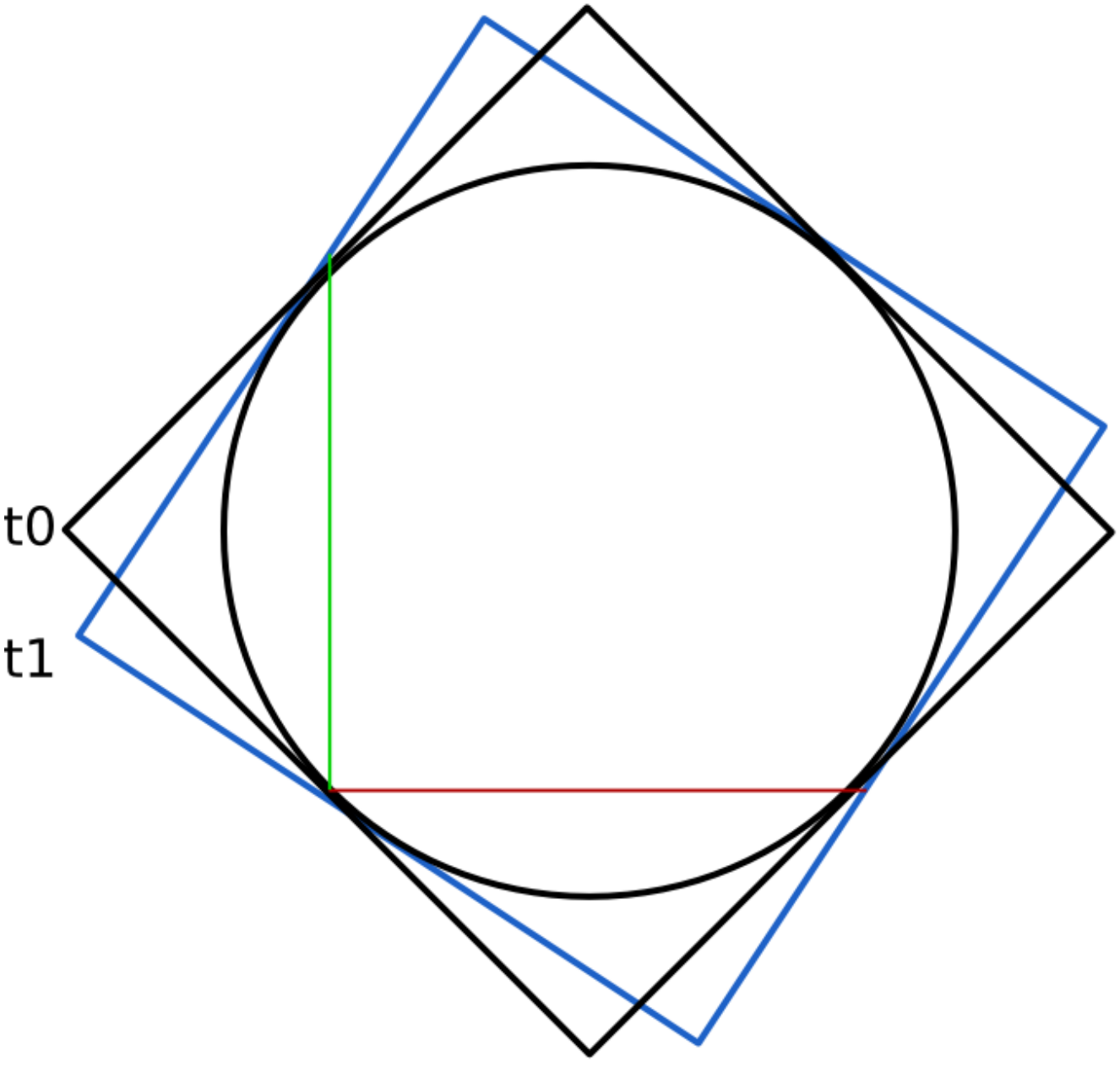

Figure 1:
At time t0 emitted light (where green and red start at the same point), green travels clockwise against rotation, and red travels counter-clockwise with rotation, hitting mirrors at time t1.

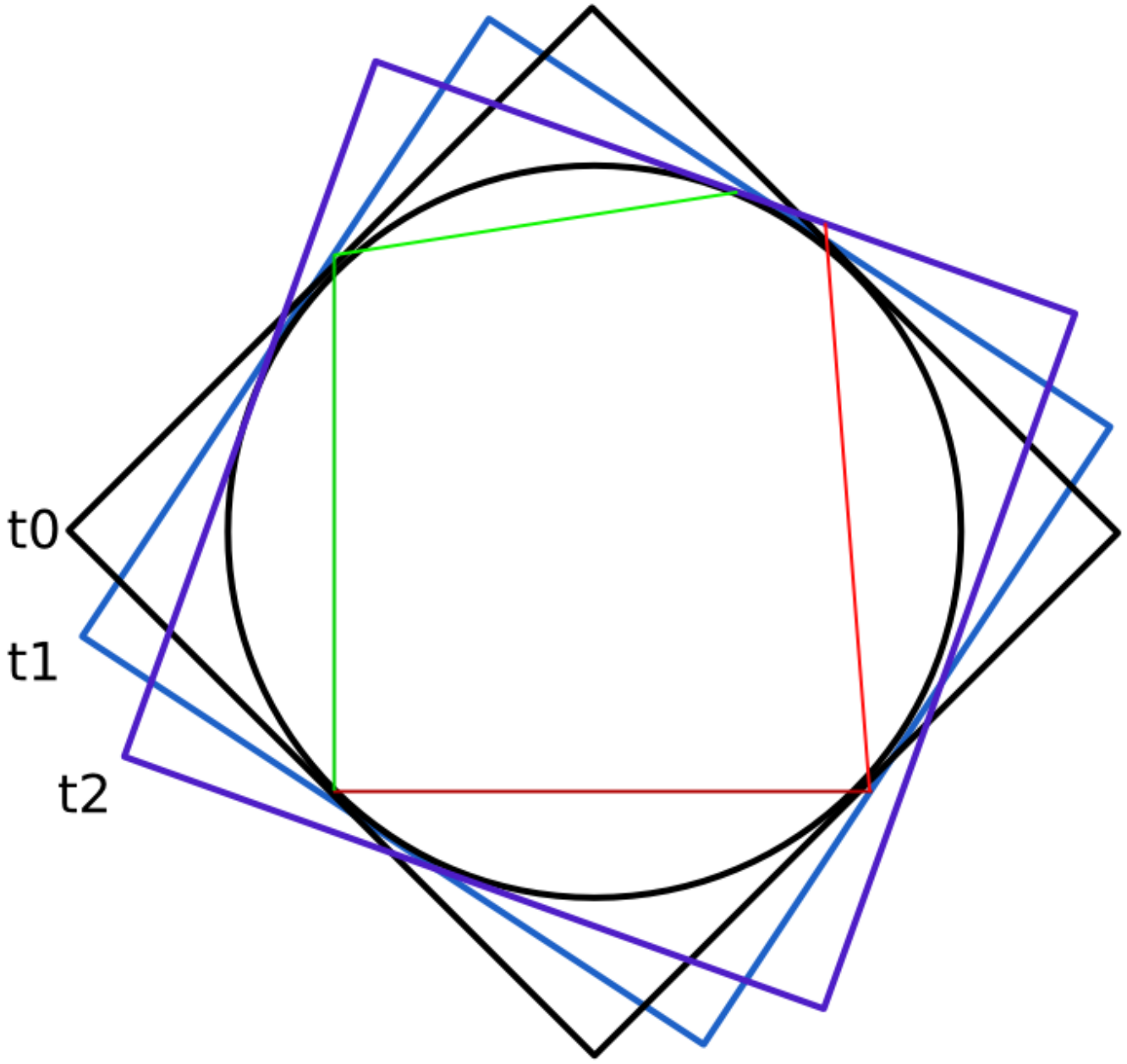

Figure 2:

At time t1 reflected light is reflected in different angles: The red light is reflected slightly inwards, and the green light is reflected slightly outwards. This leads inevitably to different pathways depending on the direction of rotation.

So to account for differences in traversal-times no fixed speed of light is needed nor ether nor any other magic but only simple geometry to show that the real, physical, pathways already do differ by itself as the rotation introduces asymmetries both in reflection-angles as well as in distances to cover between reflections.

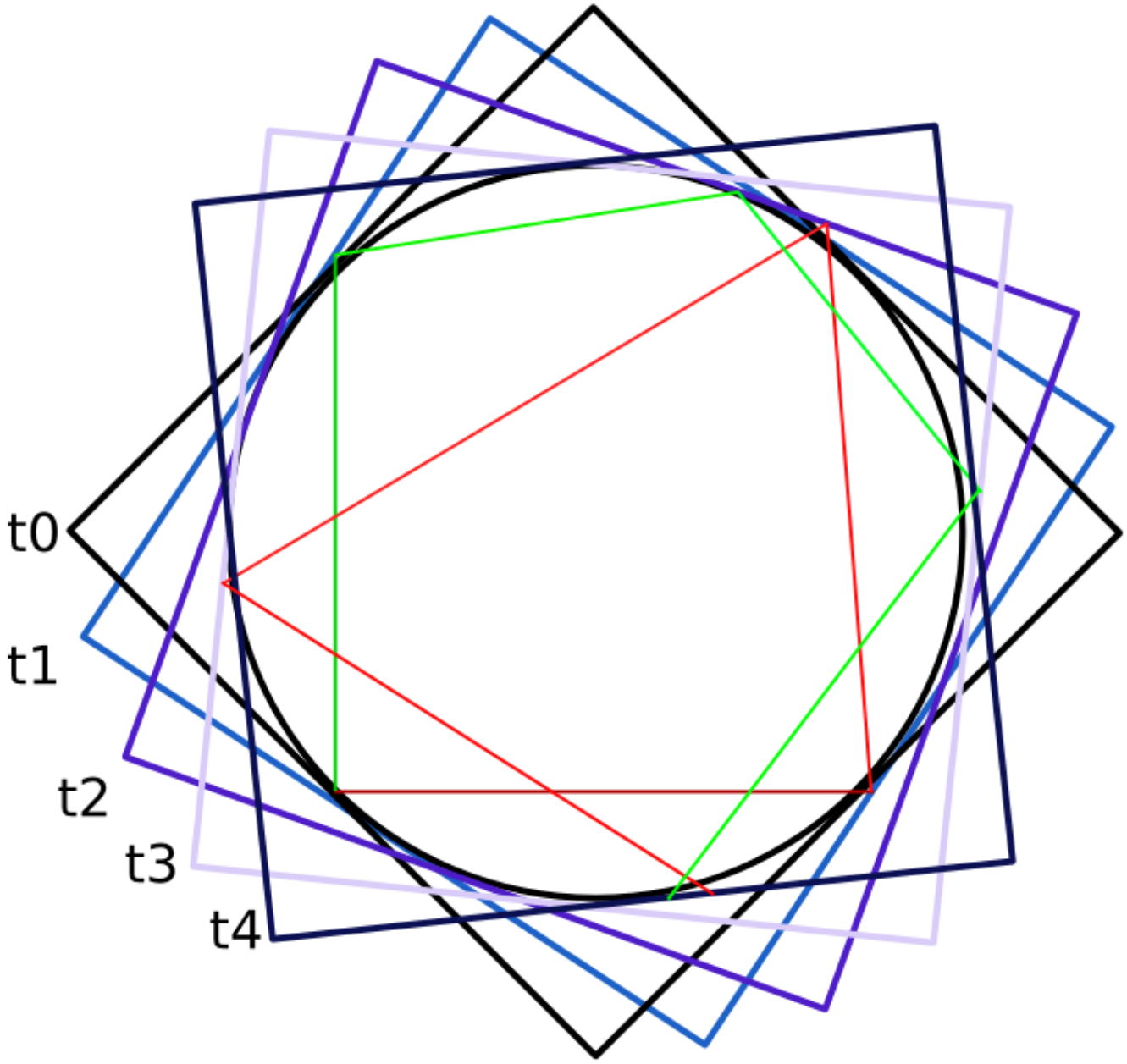

Figure 3:
What it looks like afer a w hole rotation: Red and green are now here near symmetrical.

Result: This effect can be explained much easyer with this theory than with relativity.