

The Trouble with Physic(ist)s is that they are Not Even Wrong

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I have been thinking about this and earlier discussions and wondering what to make of it all. How is it that otherwise intelligent individuals can agree en masse upon something which, on the face of it, is completely and utterly wrong?

We would like to find the metric outside of a static point particle. Clearly, before we even start, we know that the solution metric, like the problem itself, must be time-independent. Anyway, we start by writing the general form for a spherically symmetric metric WITHOUT imposing the requirement that the solution be static. Despite this, we are still able to make a change of coordinates in which the solution metric takes a static form.

We solve the Einstein field equations, and discover the usual exterior Schwarzschild solution. Now, Mr Fuckwit, our resident self-proclaimed GR 'expert', notices that if we let $r < 2m$, we get another solution of the field equations, even though it is non-static and does not happen to fit the form of the metric we derived after applying our coordinate transformations.

Any reasonably smart first year undergraduate Oxford physicist taking his first course in mathematical methods would at this point politely point out to Mr Fuckwit that the solution he has just 'discovered' does not solve our problem as (a) it is not static, and (b) does not fit the form of

the metric that we have just derived. In order not to upset Mr Fuckwit too greatly, he might mention that Mr Fuckwit's metric may turn out to be the solution to some, non-static problem, but certainly not the one we are trying to solve. But also that Mr Fuckwit should take note that his metric has a rather nasty singularity right in the middle of it, so that the chances of it being the solution to any physically reasonable problem are rather slim.

Anyway, we notice that an infalling particle appears to take an infinite amount of time to reach the 'event horizon' at $r = 2m$, where

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some of the metric components either vanishing or become divergent. Unfortunately the infalling particle reaches the horizon in finite proper time, so that it is not clear where it goes after this – so our solution must be incomplete. Mr Fuckwit of course starts dribbling profusely with excitement at this point, exclaiming proudly that the exterior solution we have correctly derived must be patched onto his own dubious interior solution so that the particle can continue falling inwards.

We take a more rational approach and note that our initial formulation of the problem was not sufficiently general to take into account all possible solutions, which could be multivalued in r . Using the method of Synge, we are able to derive the complete solution, containing both exterior patches of the 'maximal' (sic) Kruskal extension. Mr Fuckwit again jumps up with excitement, and proclaims vociferously that the entire plane, including both the black and white hole interior solutions must be included. We tell him once again to calm down, and that the interior solutions are still non-static and are still not valid solutions to our original problem. Indeed the only two valid solutions are the two (static) exterior solutions, labelled I and II:

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I ∨ II ----> I(x)II
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Two (spatially superimposed) An infinite cone with regions I and II quadrants with light cones ----> patched along the EH (dotted line) with pointing upwards in region I lightcones rotating clockwise around and downwards in region II. the cone. (We are looking down into the cone here – note that regions I and II are still spatially superimposed)

We note that the acceleration on a particle at the event horizon diverges, so that something unusual must be happening at the event horizon.

We also perform some calculations showing that the area of the horizon is $16m^2$, but that it is at distance zero from the central mass, which must therefore be at (or, rather, just inside) the event horizon. Noting that there is no curvature singularity at the horizon, and that the infalling particle must go somewhere, we realise that the only physically consistent scenario is that a particle beginning in region I, which has light cones pointing upwards, must cross to the other side of the 'wormhole' on reaching the horizon at which point it enters into region II (which is spatially superimposed upon region I), but now

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travelling backwards in time relative to region I, so that forward light cones in region II point downwards. An observer in region I will not see the particle travelling backwards in time in region II, but rather an antiparticle travelling forwards in time, so that the whole process looks like a particle–antiparticle annihilation event occurring at the horizon asymptotically at time $t = \text{infinity}$. Of course the particle in region II can in principle reach the event horizon again and return to its original position in region I, resulting in the possibility of closed timelike loops. We note however that this would not imply any inconsistency in our picture, as this process would just look like a pair creation and subsequent pair annihilation event at the EH.

We infer that this is the correct picture of the spherically symmetric solution outside of a pointlike mass. Of course we are too late as bigmouth Mr Fuckwit has already convinced himself and his sheep–like chums that he is right, and together they have made big profits on book sales without even realising that they are in a state of perpetual and irreversible mass self–delusion. To this day they take great pride in explaining the virtues of their wonderful solution, singularities and all, and in badmouthing all the 'crackpots' who reject their point of view (as they like to call them for merely disagreeing with them as they are so much smarter than the crackpots and so very certain that they are right and everyone else is wrong). Of course the establishment Fuckwits and their Sheep–like followers will never stoop to admit they have actually gotten it all wrong, and that that has been the reason that they have failed to make any significant progress in their understanding of GR in the last 90 odd years. No black holes, no white holes, just assholes. Yes, you know who you are.