

## Re: The GR metric in LeSagian Exponential Form...

**Source:** <http://sci.tech-archive.net/Archive/sci.physics/2004-10/6829.html>

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**From:** greywolf42 ([mingstb\\_at\\_marssim-ss.com](mailto:mingstb_at_marssim-ss.com))

**Date:** 10/24/04

Date: Sun, 24 Oct 2004 18:54:17 GMT

<carlip-nospam@physics.ucdavis.edu> wrote in message  
news:cl95cl\$3f8\$3@skeeter.ucdavis.edu...

> *In sci.physics Paul Stowe <ps@acompletelyjunkaddress.net> wrote:*  
>

{snip true, but irrelevant comments}

> *For black hole candidates, if your metric describes the exterior*  
> *of a collapsing/collapsed object, then presumably it should change*  
> *at some boundary to an interior metric describing the interior of*  
> *the remaining matter. For a general relativistic black hole, this*  
> *doesn't matter so much, because the transition takes place inside*  
> *the horizon, and is unobservable to those outside. Your metric,*  
> *on the other hand, has no horizon, so the "surface" of the collapsed*  
> *object is not invisible. This means that infalling matter should*  
> *hit this surface.*

Yes, it does mean this. The signature of such an impact with a solid surface is called "quasiperiodic oscillations" (QPO) or "quasiperiodic variations". As has been mentioned many times in these newsgroups over the years. Always ignored by yourself and the rest of the Relativists. i.e.:

<http://www.google.com/groups?selm=ukaqr7gq85sd98%40corp.supernews.com>

<http://www.google.com/groups?selm=6pcB6.357%243n4.107047%40nntp2.onemain.com>

<http://www.google.com/groups?selm=izUI6.48631%24B22.12296337%40news1.rdc2.pa.home.com>

The timing on your post is somewhat fortunate. A look at the October, 2004 Scientific American, page 57 (Article: "A Universe of Disks"), documents the existence of such QPO's. Although this article does not mention the term.

Of course, since the theorists that wrote the article insist that these are black holes, they write: "Physicists do not know what causes these oacillations." Of course, they have no trouble identifying the cause, when the object is a white dwarf or neutron star (when they have accretion disks):

<http://www.google.com/groups?selm=Pine.LNX.3.93.970311124456.21973C-100000%40nova.astro.utoronto.ca>

<http://www.google.com/groups?selm=30APR200115331907%40kelvin.jpl.nasa.gov>

For more "vetted" data, you can try:

<http://www.google.com/groups?selm=3E814307.ADCCDA05%40nova.astro.utoronto.ca>  
(which I missed earlier).

- > *There are two pieces of observational evidence against this that*
- > *I know of. Neither is conclusive, but both strongly suggest that*
- > *the conventional black hole picture is right.*
- >
- > *The first of these is apparent observation of "advection-dominated*
- > *accretion flow," or ADAF. As a gas falls into a black hole, it*
- > *releases a large amount of gravitational potential energy. Under*
- > *many circumstances, this energy is radiated away; this is what*
- > *astronomers "see" when they talk about observing a black hole. But*
- > *there is another possible flow, in which the energy is stored as*
- > *heat, with only a small amount of radiation.*
- >
- > *Under such an advection-dominated flow, the gas becomes extremely hot.*
- > *One can then ask what happens to the energy. If the gas eventually*
- > *hits a surface, the energy will be released; this is observed for*
- > *flows onto neutron stars.*

Yes.

- > *If the object is a black hole, on the other*
- > *hand, the energy will be lost behind the horizon and will not come out*
- > *again. This is also observed, but only for gas flowing onto objects*
- > *that are predicted from mass observations to be black holes.*

You are claiming an observation of a non-observation.

- > *While*
- > *I think there is still some controversy over details of ADAF, these*
- > *observations certainly provide some evidence of a horizon. See, for*
- > *example, <http://cfa-www.harvard.edu/blackhole/release.html>, or*
- > *Narayan et al., Ap. J. 478 (1997) L79.*

How about the QPOs from "black holes", Steve? If it walks like a duck, and quacks like a duck.....

- > *A second argument has to do with the observation (and nonobservation)*
- > *of type I X-ray bursts, which are the result of thermonuclear explosions*
- > *when gas accretes onto the surface of a compact star and ignites. It*
- > *seems to be systematically true that such bursts are observed from*
- > *objects whose mass is low enough that they ought to be neutron stars,*
- > *and are \*not\* observed from objects whose mass is lowhigh enough that*
- > *they ought to be black holes.*

And absence of evidence is not evidence of absence. Of course, the absence of evidence may result from the unwillingness of journals to publish such evidence that is clearly known to run contrary to GR. While QPOs are more subtle, and not well known to contradict GR.

- > *This is again evidence that the black*
- > *hole candidates have no visible "surface" on which the gas can collect.*
- > *There's a nice, not-too-technical lecture by Narayan on this on the*
- > *arXiv, astro-ph/0310692, which also discusses possible loopholes.*

GR thrives on loopholes.

- > *These observations are certainly not conclusive; it might well be*
- > *possible to cook up a theory without an event horizon that still*
- > *agrees with what we have seen so far. (Note, again, that a crucial*
- > *element is something \*not\* included in your metric -- in this case,*
- > *the question of what matter looks like on the "inside.")*

A false claim. There is no need to describe what matter "looks like" inside a 'grey hole' / big sloppy neutron star in order to understand what happens outside the conglomeration.

- > *Observations*
- > *of gravitational radiation from colliding black holes and from objects*
- > *falling into black holes is probably not \*too\* far off,*

You're claiming future evidence to justify your position. It's too bad that the original experiments failed to find gravitational radiation that was expected. They had to move the goalposts. Just like the lifetime of protons.

- > *and this will*
- > *eventually allow a detailed investigation of the metric.*

Not if they are never found.

- > *But the*
- > *existing evidence \*does\* show that there are strong differences*
- > *between collapsed objects with neutron-star masses and those with*
- > *black-hole masses,*

A false claim. There is only "missing" data in favor of such claimed differences.

- > *and that these differences have to do with the*
- > *question of whether infalling matter hits a surface and releases energy*
- > *that then escapes.*

The only directly observable evidence (QPOs) clearly rule in favor of same effect, same source. That is, a solid surface.

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