QUASARS IN THE UNLIMITED GENERAL RELATIVITY

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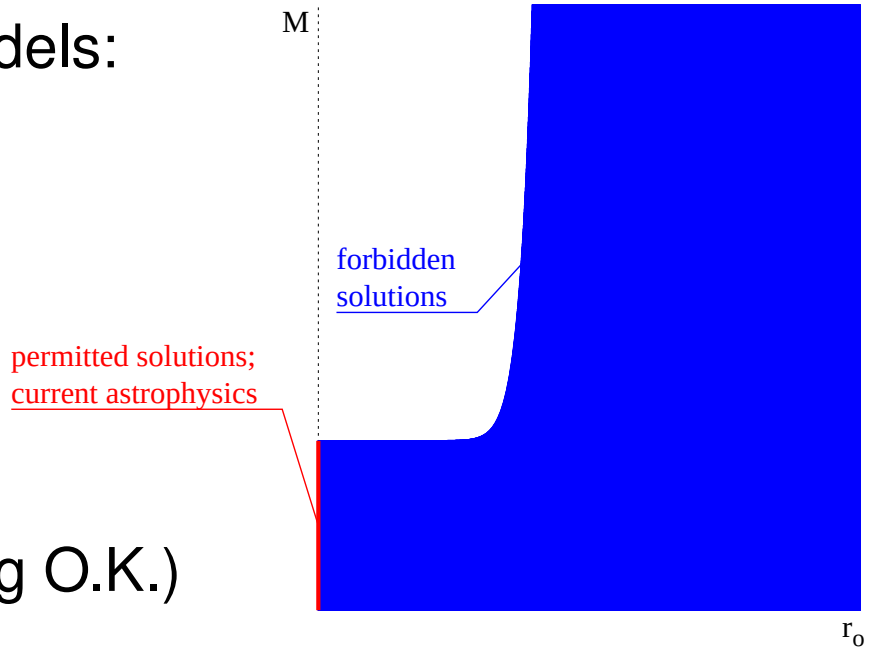
Today, only the "normalized" solutions of field equations are permitted to describe the relativistic compact object (RCO) [e.g., a neutron star].

This demand likely originates in the concept of common star in the Newtonian physics; it appears to be just a POSTULATE.

Ignoring the postulate $\rightarrow$ the RCO's models:
- in stable-equilibrium configuration;
- with positive pressure and energy density everywhere in the RCO's body;
- gravity of each volume of RCO's body attractive;
- smoothly tailored RCO's metrics with that of adjacent vacuum; etc. (everything O.K.)



It is absurd to ban, arbitrarily, almost all general relativity (blue area) **in the astrophysical applications.**

A more detailed description: https://www.astro.sk/~ne/neslusanMPLA.pdf

If the normalization postulate is abolished:

– the net gravity of the upper concentric material layers of RCO (i.e. the layers with the radii larger than the RCO-centric distance of a test particle (TP)) is non-zero; the TP is attracted away from the RCO's center by these layers (in the Newtonian physics and limited general relativity (GR), the net gravity of upper layers is zero)

– we can construct a model of stable RCO of whatever a large mass, its outer physical surface is situated above the event horizon $=>$ emission of radiation and mass ejections from the RCO are possible

– very massive RCOs acquire a stable minimum-energy configuration in the form of a hollow sphere

– gravitational acceleration of objects in a vicinity of RCO is not linearly proportional to the RCO's energy; the energy can be about several orders of magnitude larger than in the case of linear dependence $=>$ the quasars can have enough energy to emit the radiation of the observed huge luminosity during the age of the universe; yet, the most massive of them could have spent only a negligible fraction of their initial total energy

Cosmology of quasars:

(A) - limited as well as unlimited GR	(B) - unlimited GR; an alternative
1. dispersed intergalactic matter	1. energetic inhomogenities in the radiation fluid (during the cosmological era of radiation)
2. local accumulations of matter	2. a further concentration of the inhomogenities due to self-gravity $=>$ formation of radiation spheres
3. seeds of super-massive black holes (SMBHs)/RCOs	3. conversion of radiation to a baryonic matter inside the spheres $=>$ RCOs
4. formation of SMBHs/RCOs with the accretion disks around	4. mass ejections from RCOs $=>$ formation of galaxies from the debris
MECHANISM OF QUASAR: strong accretion onto SMBH/RCO	MECHANISM OF QUASAR: intensive radiation from RCO photosphere

We do not claim that (B) is the actual cosmological scenario; the observations will say what is the case. We claim that (B) is consistent with the GR.

Let us use unlimited GR! Let the GR works freely!