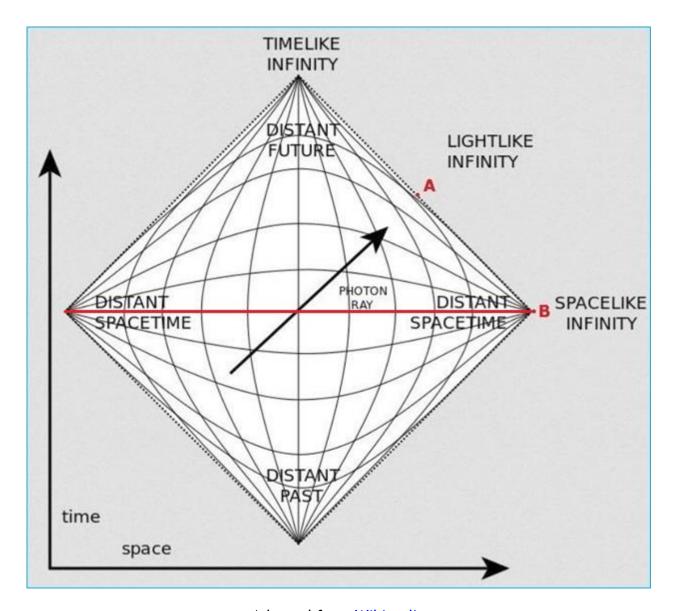
## **Penrose-Norris Diagram**



Adapted from Wikipedia

"Penrose diagram of an infinite Minkowski universe. The diagonal boundary lines of a Penrose diagram correspond to the "infinity" where light rays must (Sic! - D.C.) end."

To quote from Wikipedia, the Penrose diagram "introduces a system of representing distant spacetime by shrinking or "crunching" distances that are further away. Straight lines of constant time and straight lines of constant space ordinates therefore become hyperbolas, which appear (Sic! - D.C.) to converge at points in the corners (not at A - D.C.) of the diagram. These points represent "conformal infinity" for space and time."

This is not a joke — check out Penrose\_omega\_zero.jpg.

In the drawing above, I marked null infinity (Scri+) with A and spacelike infinity (Spi) with B, to help you define null-and-spacelike infinity (Scri U Spi viz. Trautman-Bondi mass & ADM mass) exactly at A≡B: "Essentially nothing is known" (Bob Geroch). True, because Scri and Spi are apples and oranges — there is no room whatsoever for any dynamics (Bob Geroch) along spacelike directions. The entire universe is already fixed en bloc and the horizontal red line above shows the "trajectory" of some transcendent tachyon, which will be absolutely everywhere in no time, that is, at absolute rest.

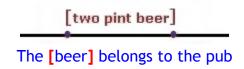
How about the first *direct* observation of vacuum spacetime, dubbed GW150914? You have to install GW "mirrors" exactly at A≡B (p. 3 in Schutz.pdf), to confirm Penrose's conformal recipe and BMS group B (Hermann Bondi et al., Paper VII). They were validated empirically by Prof. Dr. rer. nat. Chuck Norris (announcement below).



Chuck Norris' idea was to jump into the so-called "unphysical manifold M" suggested by Roger Penrose, reach the very "edge" of spacetime ( $\Omega = 0$ ), and safely come back, contrary to the *insoluble* Thomson's lamp paradox. Is this mathematically possible?

Yes it is possible, but iff the "unphysical manifold M" actually belongs to the *entire* pub in the example below, including the red "edges" ( $\Omega = 0$ ) of the two pint beer:

An infinite (*actual* infinity) crowd of mathematicians enters a pub. The first one orders a pint, the second one a half pint, the third one a quarter pint... "I understand", says the bartender — and pours two pints.



Under this crucial condition, Penrose-Norris will <u>not</u> be approaching asymptotically the red "edges" ( $\Omega = 0$ ) of the [two pint beer] "as closely as desired" (Adolf Fraenkel), but will *actually* hit them and **stop** *exactly* at the [GW "mirrors"] at  $\Omega = 0$  — twice. Needless to say, the *entire* pub, including the two edges ( $\Omega = 0$ ) of the [two pint beer], cannot be "conformally equivalent" to the [beer], and therefore Penrose's recipe for reaching infinity is manifestly false. Besides, keep in mind that the beer is 95% "dark".

Alternatively, check out holon.pdf and CEN.pdf and the references therein. The 'two pint beer' above is endowed with *dual* mode of spacetime, global and local. The *global* mode defines the **inertia** of the two pint beer (Fig. 2, p. 4 in holon.pdf) *en bloc* (Sic!). It is *quietly* (A2 in Slide 19) residing within the *entire* "pub" above (Fig. 4 in CEN.pdf). It is intrinsically **nonlocal** and cannot be detected — the physical bodies are made by asymptotic "beer" approaching the "edges" of spacetime *asymptotically*, as closely as desired, and we can <u>only</u> detect local finite *physicalized* 4D "jackets" (p. 3 in CEN.pdf) cast in the *local* mode of spacetime, with positive mass only (Eq. 1, p. 4 in CEN.pdf).

See also p. 36 in spacetime.pdf, and Fig. 12 (dual age cosmology) and p. 15 in CEN.pdf. All this is encapsulated in the old story below (Fig. 22 in spacetime.pdf).



The enclosed words mean 'The All is ONE'

Any time you look at your watch to record your local 'here and now', the Dragon has already caught its tale in the **past**, and the next **new** state of the tail (Heraclitus river) has already been shifted one infinitesimal step (**dt**) ahead in the **future**, ad infinitum. The **past/future** polarization of spacetime unfolded "after" [John 1:1], of course.

This is just a casual outline to the dynamics of spacetime (p. 6 in holon.pdf). The full version is expected by Christmas 2017, hopefully.

D. Chakalov10 March 2015

Latest update: 18 May 2017, 11:06 GMT

## **ADDENDUM**

Truth never triumphs — its opponents just die out. Geheimrat Max Planck

Thirty years ago, on Thursday, 5 February 1987, I presented the widely known fact of 'quantum reality' at a seminar at the Institute for Nuclear Research and Nuclear Energy at the Bulgarian Academy of Sciences in Sofia: check out Slide 7. I spoke for 40 min, from 11AM to 11:40AM, arguing that the human brain and all living organisms utilize 'quantum reality', which is not present in QM textbooks. There was 20 min felt for discussion until 12PM, but, strangely enough, none of my colleagues attending the seminar raised any questions. It was unprecedented reaction on behalf of these academic scholars, all of whom had very high academic credential, mostly from Dubna in Russia. I interpreted their silence to the fact that I was sharply challenging the official dogma of Marxist-Leninist philosophy, presented by Vladimir Lenin in his pamphlet 'Materialism and Empiriocriticism' (1909), and they didn't want to get involved — we were living in a dreadful communist country, totally controlled by the communist mafia and Bulgarian branch of KGB. But I nevertheless decided to speak out, and was very well prepared to answer all questions about 'quantum reality' in QM and in QED. But again, my presentation on 5 February 1987 was met with dead silence, and none of my colleagues mentioned anything about it afterwards, even privately.

On Monday, 16 March 1987, the communist mafia struck back: I was informed that I have lost my job, effective *immediately*. Why? The official explanation was that the Bulgarian Academy of Sciences does not have money for *my* salary. It was a devastating moment, which I can never forget. But what doesn't kill you only makes you stronger.

Now we all live in a normal world, and nobody has to talk communist bullshit in order to keep her/his job. Yet the reaction to my work from hundreds of mathematicians and theoretical physicists, from many countries around the world, is *exactly* the same — **dead silence** (p. **81** in gravity.pdf).

Do I have to fly over Thames in London (pp. 5-6 in holon.pdf) to eventually trigger their interest in theoretical physics?

What if I am talking to Russians and Max Planck is right?

D. Chakalov 16 May 2017, 14:24 GMT

## NOTE

As of today, 20 May 2017, no reply to my email messages from May 11<sup>th</sup> and May 16<sup>th</sup> (gravity.txt) has been received. Nobody even wrote back just to say something to the effect of I-am-too-busy-go-to-hell. The only professional feedback to my work came five years ago, from Prof. Dr. rer. nat. Maurice de Gosson at the University of Vienna: "Buzz off, idiot!" (Mon, 21 May 2012 18:47:46 +0200).

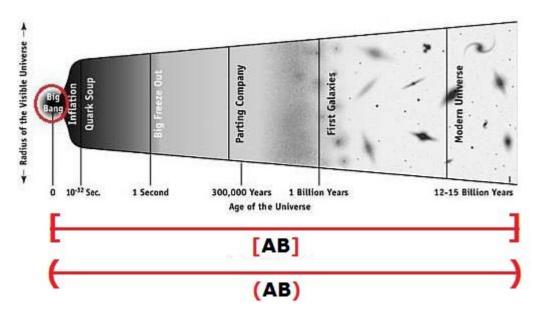
Any other comments, please?

If you also believe that I am an idiot and/or you cannot understand the *generic* problem above, check out ref. [21] in CEN.pdf (links and emphasis added by me):

José M.M. Senovilla, Singularity Theorems in General Relativity: Achievements and Open Questions, 30 April 2006, arXiv:physics/0605007v1, p. 6.

Singularities in the above sense clearly reach, or come from the **edge** of spacetime. This is some kind of boundary, or margin, which is not part of the spacetime but that, somehow (Sic! - D.C.), it is accessible **from within it** (Sic! - D.C.). Thus the necessity of a rigorous definition of the **boundary** of a space-time.

Denote the "boundary of a space-time" with  $\Omega$  from Penrose's recipe, and place it *exactly* on the endpoints of the *closed* interval [two pint beer] above, depicted with [AB] in the drawing below, from Slide 12. Your clock reads an "expanding" (AB).



[AB] must be "somehow" accessible from within (AB), although [AB] is "some kind of boundary, or margin", which is <u>not</u> part of (AB).

The only possible solution is explained above. No need to invent the wheel.

D. Chakalov 20 May 2017, 10:56 GMT