The Three Time Flows of Any Quantum or Cosmic Particle

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Abstract

In quantum and relativist mechanics, the time flow seems to have a basic place.
The "doubling theory" (Garnier-Malet, 1998,1999, 2000) gives rise to a new interpretation of any quantum or cosmic particle of our Universe by this concept of time flows in horizons of events. This notion of horizons of particles is fundamental as much as the notion of time flows. Always present in quantum mechanics, these horizons, limiting interactions and observations of their internal particles, are also a physical reality in the Universe. In fact, in all physical phenomena (as well subatomic as cosmological) stroboscopic time flows, alternating temporal holes and windows, may explain different current observations and paradoxes.

Keywords : real or virtual particles and horizons, stroboscopic time flows, temporal holes and windows, doubling, spinback, solar cycles.

1 Introduction

Recent cosmological observations permitted three new discoveries about our Universe :
1 In 1998, by observations of supernovae, B. Schmidt in Australia and S. Perlmutter in USA highlighted an unknown energy which currently accelerates the expansion of our universe. This energy of anti-gravitation (70% of the energy of the universe) would be opposed to the energy of gravitation (30%). By introducing the cosmological constant in its equations in 1917, Einstein tried to explain this mysterious energy of the vacuum. In 1920, he wrotee that it was the greatest error of its life
2 In March 2000, the deviation of the light by the missing masses (cosmic astigmatism as predicted by Einstein's theory of relativity) allowed Y. Mellier in France to publish a map of this non-observable masses. This map confirms an energy of vacuum (anti-gravitation) which seems to come from an initial big-bang. Thus, this initial explosion of an initial particle in the vacuum seems to be a right assumption.
3 In April 2000, an experiment, called "boomerang" (balloon observation of millimetric extragalactic radiation and geophysics), allowed P. de Bernardis in Italia and A. Lange in USA to measure the background radiation of the big-bang. These measurements confirm the preceding conclusions. They seem to prove that our Universe is flat. So, the big-crunch would be a wrong assumption.
The "doubling theory" considers that any space (dust, atom, cell, planet, star, galaxy,...) is at the same time – but not in the same time flow – an horizon and a particle in another horizon. With a system of motions, called "fundamental motion", different stroboscopic time flows in different horizons allow any particle (or horizon) to become two doubled particles (or horizons) in temporal holes of its time flow.

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The anti-gravitation, the big bang, the missing masses, the Universes (corresponding to three time flows of any particle or horizon) are explained by this cycle.
A fundamental solar doubling cycle of 25 000 years allow us to understand these new concepts (time flows and particles horizons) and the preceding important observations.
The end of this cycle (2012-2019) implies a temporary end of the observable Universe expansion (Garnier-Malet, 1999) and the possibility of many planetary disturbances.

2 Fundamental Motion or Spinback (Garnier-Malet, 1998, 1999)

The fundamental motion is composed of three simultaneous rotations (figure 1a).
The particle $\Omega_n=\Omega_0/2^n$ is also an horizon, which is making the same motion into the horizon $2\Omega_n$ during the path of $2\Omega_n$ on Ω_0 (which is called "tangential path").
The rotation $\varphi=\pi$ is called "spinback" of Ω_0. It corresponds to the spinback of $2\Omega_n$, made during the tangential path of $2\Omega_n$ on Ω_0, called "tangential spinback".

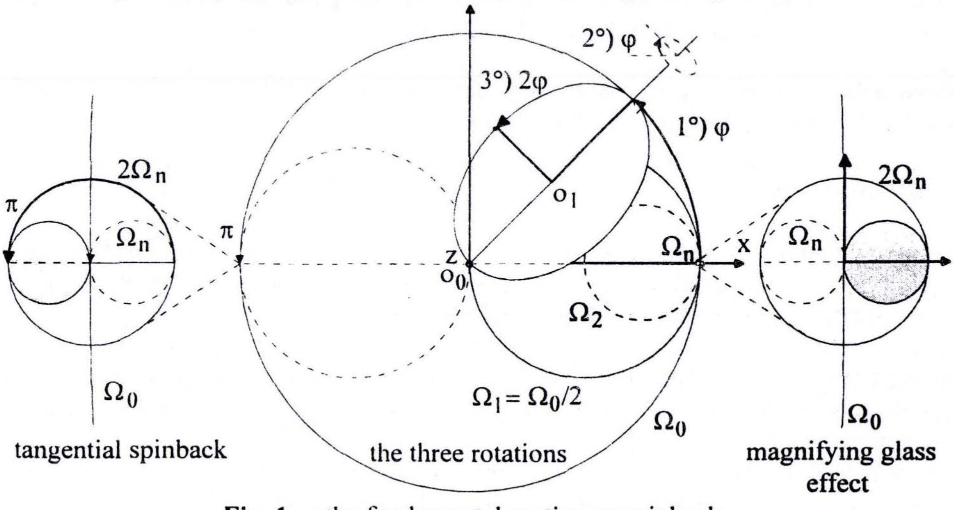

Fig. 1a : the fundamental motion or spinback.

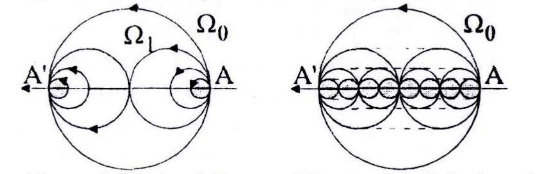

Fig. 1b : spinback of Ω_0 **Fig. 1c :** radial virtual path

The spinback of Ω_0 corresponds to 2^n spinbacks of Ω_n called "radial spinbacks" into Ω_0.
The geometrical fission of Ω_1, Ω_2,..., Ω_n in A and the geometrical fusion in A' don't give the initial conditions again : it turns back the Ω_1 into Ω_0 (figure 1b.).
Outside of Ω_0, the non observable paths of Ω_1, Ω_2,..., Ω_n are "radial paths" into Ω_0 according to the "radial axis" AA' (figure 1c).

3 Stroboscopic Time Flows : Temporal Holes and Windows (Recall)

If the horizon Ω (radius R) of the particle α (radius R/8) was *motionless*, 2^3 radial spinbacks of α ($8\pi R/8$) would correspond to one spinback πR of Ω. But any horizon or particle (quantum or cosmic) is dynamic. So, the spinbacks of α imply alternative temporal holes and windows in the stroboscopic time flow in Ω. The stroboscopic effect of time comes from the anticipation and the dilation of α out of its dynamic horizon Ω.

3.1 Anticipation of the Particle Outside its Dynamic Horizon

By definition of the fundamental motion, the 9^{th} spinback of α is outside Ω during the 1^{st} spinback of the horizon Ω (figure 2). It begins after the rotation $7\pi/8$ of Ω before the end of the spinback of Ω. It corresponds to a hole of time of the time flow of Ω.
In 2Ω, outside of Ω (figure 2) it is not observable and the first spinback of α in Ω' (position of Ω after one spinback of 2Ω) corresponds to the 10^{th} spinback of α.

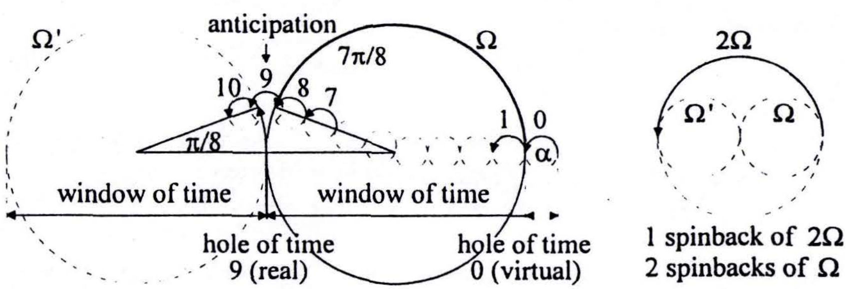

Fig. 2 : initial time flow (temporal holes and windows of the initial horizon Ω)

3.2 Dilation of the Particle in a Temporal Hole

Just after the 8^{th} spinback of α, this particle is dilated by the fundamental motion :
3 successive dilations ($\times 2^3$) transform α into $2^3\alpha = 8\alpha = \Omega$ (figure 3).

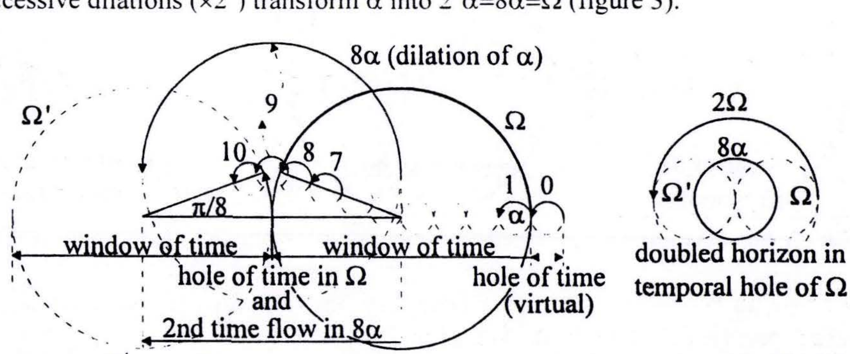

Fig. 3 : 2^{nd} time flow of the real doubled horizon 8α in a temporal hole of Ω.

The dilated particle 8α becomes a doubled horizon during a non-observable temporal hole of its initial horizon Ω. It becomes a 2^{nd} initial horizon $8\alpha=\Omega$ for a 2^{nd} initial particle $\alpha/8$ which becomes α by the same dilation $8(\alpha/8)=\alpha$.

3.3 Acceleration of the Time Flow

The rotation π of the initial particle α is 8 times faster than the rotation $\pi/8$ of the initial horizon Ω. So, the spinback of 8α is 8 times faster than the spinback of Ω (figure 4a).
In the temporal hole of Ω, inside the doubled horizon 8α, the time flow is accelerated. For the dilated particle $8\alpha/8$, this acceleration seems to dilate the initial horizon (expansion) during the doubling motion.

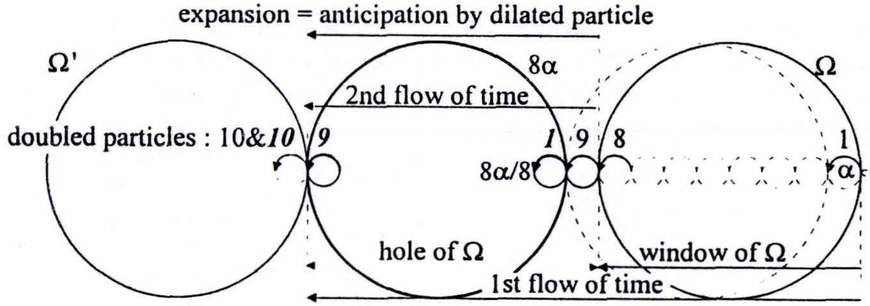

Fig. 4a : expansion of the initial horizon inside 8α

The 10^{th} spinback of α out of Ω corresponds to the 10^{th} spinback of $8\alpha/8$ out of 8α.
So, the initial particle α remains always the particle $8\alpha/8=\alpha$ while becoming the doubled particle $64\alpha/64=\alpha$ in the same time but not in the same time flow (figure 4b).

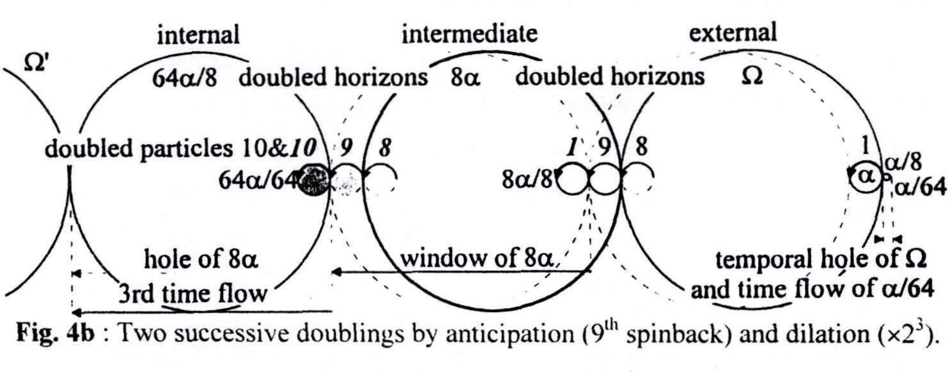

Fig. 4b : Two successive doublings by anticipation (9^{th} spinback) and dilation ($\times 2^3$).

The time flow in $64\alpha/8=8\alpha$ is 10 times faster than the time flow in $8\alpha=\Omega$ which is 10 times faster than the time flow in Ω. And so on...
The time flow is accelerated from 1 to 10 by each dilated embedded particle or horizon.

Three successive doublings (external, intermediate, internal) are made in successive temporal holes of virtual horizons which accelerate the time flow.
However, in an initial virtual temporal hole, the initial particle α can be considered as a dilated horizon $8\alpha/8$ of the initial particle $\alpha/8$, which is the dilated particle $8\alpha/64$ of the initial particle $\alpha/64$ (figure 4b). So, with the accelerated time flow of Ω', the initial horizon Ω becomes its internal particle α in a temporal hole of its initial time flow.
Before the end of the spinback of Ω, the initial time flow of Ω is accelerated 3 times (from 1 to 10^3) in Ω'. The spinbacks of Ω defines a cycle of doubling of six embedded horizons which are necessary for a final juxtaposition.

3.4 Six Embedded Horizons for Three Time Flows

After six successive accelerations of the initial time flow, by six successive anticipations and dilations, the external initial horizon Ω becomes an external particle of an internal dilated horizon. The successive doublings use periodic juxtapositions of the embedded horizons in common temporal holes.
These juxtapositions are made in the 1^{st}, 4^{th} and 7^{th} horizon. Three embedded horizons are necessary to separate two different successive time flows. In fact, we can consider that a real intermediate particle (4^{th} horizon) is the doubled particle of an external virtual particle (1^{st} horizon) and have a doubled internal virtual particle (7^{th} horizon).

3.5 Missing Horizons in Temporal Holes

We can notice that 9/10 spinback of the initial horizon Ω creates the intermediate particle $8\alpha/8$ during 1/10 spinback of Ω (temporal and non-observable hole of Ω).
In the same way, 9/10 spinback of the intermediate horizon 8α creates the internal particle $64\alpha/64$ during 1/10 spinback of 8α (temporal and non-observable hole of 8α).
These two creation times can transform a virtual initial particle $\alpha/64$ into the real initial particle $64\alpha/64=\alpha$ during 1/1000 spinback of the initial horizon Ω. If the time of 1/1000 spinback is used for the initial particle doubling, the time of 999/1000 spinback are used for the initial horizon doubling. That explains the embedding of missing particles (9/10) in horizons (1/10) and missing horizons (9/100) in 2^{nd} horizons (1/100) and so on.

4 The Goal of the Doubling in Temporal Holes

The goal of the doubling is to anticipate an experiment in a temporal hole before trying it in a temporal window. In non-observable temporal holes, the future of the initial external particle α is experimented by the intermediate doubled particle $8\alpha/8$ whose future is experimented by the doubled internal particle $64\alpha/64$.
By cyclic juxtapositions of "threefold frames of reference" of embedded horizons, an exchange of information during common temporal holes gives to the virtual external particle the conclusions of the experiment of the internal particle (Garnier-Malet, 2000).

So, each temporal hole transforms the future of the intermediate particle into its instantaneous past. The time of an exchange defines the reflex time of the intermediate particle in its horizon, that is to say its instantaneous potential in its temporal holes.
A fundamental equation defines the exchanges conditions between the three embedded particles (internal, intermediate, external). It allowed me to calculate for the first time the speed of light C_0 which defines the speed of doubling in the solar system during its cycle of doubling (Garnier-Malet, 1998).
In the doubled horizons of our solar system, this necessary cycle of doubling needs 24 840 years : 12 cycles of 2160 years minus 12 cycles of 90 years for 12 transitions. That corresponds to 100 cycles of 248,4 years of the "associated" particles Sun and Pluto (248,4 years is the time of the "year" of Pluto).

5 Anti-Gravitation (66,6%), Gravitation (33,3%) and Balance (0,1%)

A new theorem (Garnier-Malet, 2000) established a connection between velocities of radial spinbacks and energies. It defined three doubling energies of any horizon which is always doubled in three successive time flows (external, intermediate, external) :
1 Internal energy of "coherence" : gravitation 33.3%,
2 Intermediate energy of "radiation" : anti-gravitation 66,6%,
3 External energy of "balance" : doubling energy 0,1%.
So, 3 intermediate juxtapositions are necessary for the 3 dilations ($\times 2^3$) and the exchanges during the 9^{th} spinback of the internal particle. They give to the internal particle three accelerations of the time flow (from 1 to 10^3).
Because of the two preceding conditions (3 and 10^3) the proportions of the 3 energies are always the same in the 6 embedded horizons necessary for the doubling in the 7^{th}.
In the temporal hole (9^{th} spinback of α), 33,3 % of the energy (gravitation) become ($33{,}3 \times 3.10^{-3}$). In the same time (one common temporal hole) but not in the same time flow (figure 5), two internal energies, (10^{-3}) and (10^{-6}), come from the dilated intermediate particle $8(\alpha/8)$ and the dilated internal particle $64(\alpha/64)$:

$$(33{,}3 \times 3.10^{-3})(1 + 10^{-3} + 10^{-6}) = 0{,}0999999999 \cong 0{,}1\ \%$$

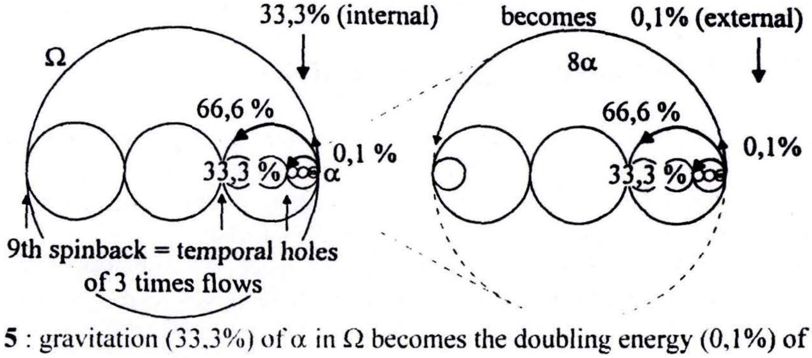

Fig. 5 : gravitation (33,3%) of α in Ω becomes the doubling energy (0,1%) of 8α.

With the same three initial doubling energies, the dilated particle 8α becomes the doubled horizon of the initial horizon Ω. The proportions of these energies are observable at the end of the solar doubling. They balance three different time flows which imply three speeds of doubling, C_2, C_1 and C_0 (the speed of light, observable in the solar system during its doubling), Garnier-Malet, 2000 :

$$C_2 = 7C_1 = (7^3/12)10^5 C_0.$$

These three speed are necessary to make the exchanges between internal, intermediate and external particles. At the end of the cycle of doubling, a final juxtaposition of the six embedded horizons makes similar the three time flows. All the future experiments of the internal particle become past informations of the intermediate particle and the external particle begins a new cycle of doubling.
In the six doubled horizons of our solar system, this cycle currently ends.
It is the end of three different time flows, in other words, "the end of times".

6 New Conclusions about Our Universe

The doubling theory demonstrates that our "observable" Universe is in a temporal hole of a non-observable external Universe whose time flow is different. In our stroboscopic time, our temporal holes "open" new time flows in a non-observable internal Universe. So, the observations of our Universe concern the intermediate Universe. The internal and external non-observable Universes are observable only by their effect in our observable Universe, according to the periodical juxtapositions of six embedded horizons during the solar cycle of 25 000 years.
At the end of this cycle, the three Universes become observable.

6.1 Virtual Big-Bang at the End of the Differences of the ThreeTime Flows

The initial big-bang is the effect of the three stroboscopic time flows (figure 6a).

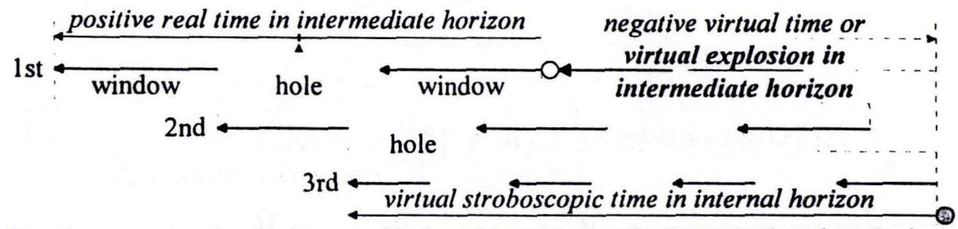

Fig. 6a : negative time in temporal holes of intermediate horizon or virtual explosion.

The temporal holes create a negative virtual time in an internal horizon and give to the initial particle (which is a real horizon) a virtual initial position. The end of the differences of time flows in our solar system, generally called "times end", gives us the impression of an initial explosion. But this famous big bang has no reality.

6.2 Virtual Expansion at the End of the Differences of the Time Flows

The solar system corresponds to six embedded doubled horizons in an initial horizon (heliosphere). We are in temporal holes of the time flow of this solar horizon which determinates our speed of light C_0. The solar horizon is an initial particle in a galactic horizon which is the initial particle of an extragalactic horizon with another time flow and another speed of doubling C_1. The extragalactic horizon is a particle in our Universe with a third time flow which determinates a third doubling speed C_2 so that (see n°5) :

$C_2 = 7C_1 = (7^3/12)10^5C_0$.

The final exchange of the internal dilated particle in the initial horizon needs $(7^3/12)10^5$ internal radial spinbacks of a internal particle whose velocity in its external dilated horizon is C_0. So, in our solar horizon, we perceive C_2 as C_0 and we forget our internal and external Universes. But the final balance of the time flows at the end of the solar cycle juxtaposes our internal, intermediate and external horizons (figure 6b).

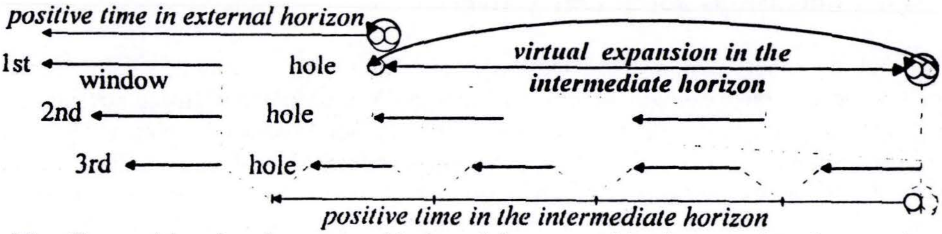

Fig. 6b : positive time in temporal holes of the external horizon or virtual expansion

The current observations perfectly correspond to the end of the solar cycle.
During the six final periods (which juxtapose the six doubled solar horizons), the virtual initial particle seems to be the first state of our observable Universe before a big bang in the vacuum (figure 7).

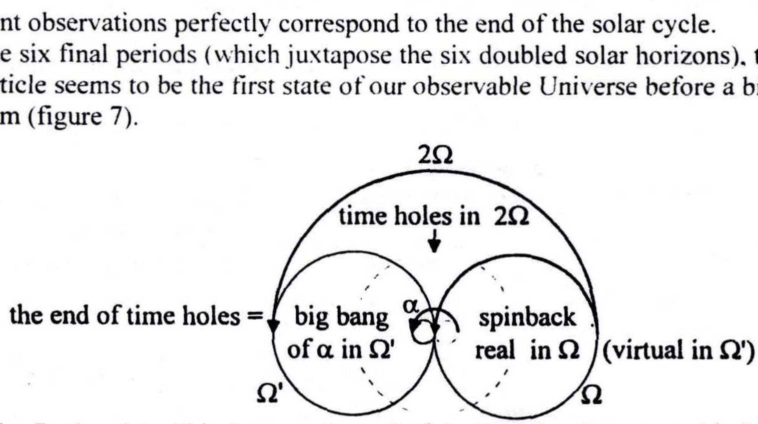

Fig. 7 : the virtual big-bang or the end of the doubling in temporal holes.

Because of the final exchange, a virtual initial particle becomes a real observable Universe and a non-observable or virtual Universe becomes a real observable particle.

6.3. The End of the Solar Cycle by the Juxtaposition of the Doubled Universes

The juxtapositions of the three internal horizons (embedded in our temporal holes) balance our time flow with the internal time flow. They implied a famous solar explosion on March 13, 1989 (Garnier-Malet, 1999).
Since, the juxtaposition of the three external horizons (embedded in the temporal holes of the external Universe) balances our time flow with the external time flow.
But the time of the three last periods is not the same : it depends of the next temporal windows of the external Universe because we are in its temporal holes.
The acceleration of the expansion proves that these last periods are less longer than the first periods. The final juxtaposition gives to our horizon the final balance with 66,6% of the "energy of the vacuum" (new theorem).
Well, the current observations give us the same result (about 70%) and prove that we are at the end of the differences of our three time flows.
By balancing the time flows, this final acceleration transforms our "opened observable Universe" into a virtual "plane" Universe. This observation corresponds to the necessary radial privileged direction of embedded Universes. The final juxtaposition superposes the different radial axis of different embedded horizons.

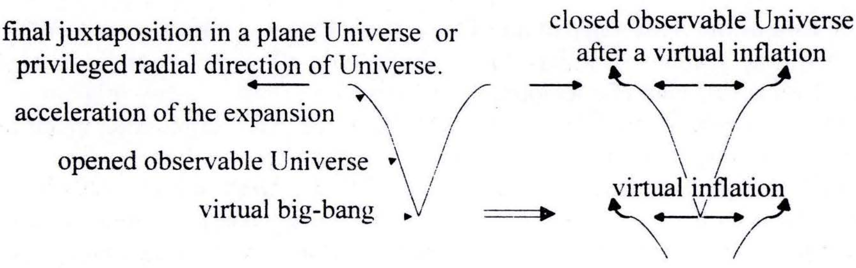

Fig. 8 : the initial and final cyclic juxtapositions of the doubled embedded Universes.

At the beginning of a new cycle, the opened observable Universe (or horizon) becomes closed and an observable contraction ends around a virtual internal space which seems to be a real initial explosive particle in a privileged plane.
That explains the assumed initial inflation of the observable Universe at the first times (Theory of the Inflation, 1983, Alan Guth and Andreï Linde).
In fact, the internal virtual time flow of the initial particle suddenly disappears and the external real time flow of the initial horizon suddenly appears.
Now, the acceleration of the expansion of Universe, the balance between anti-gravitation (66,6%) and gravitation (33,3%), and the observations of a "plane" Universe (by missing masses), show us clearly that it is the end of the last three periods.
The surprising increase (182%) of the sunspots on the Sun at the end of the solar cycle of 11 years (January 2000) and the present solar activity confirm the imminence of this end of period.

6.4 Missing Masses (Internal and External)

By three accelerations of the doubling into temporal holes (from 1 to 10^3) the external solar doubling energy (0.1%) becomes outside 100%.
So, the internal solar doubling transformation is not observable in the temporal holes.
However, if the existence of the temporal windows allows us to observe masses in our Universe, the existence of the temporal holes is observable by the missing masses. But, these observable and missing masses are in the temporal holes of the initial horizon where other initial masses are moving in its temporal windows.
We saw (paragraph 3.5) that the creation time of the doubled particle corresponds to 9/100 of the time of the initial horizon spinback. So, in the intermediate horizon (2nd time flow in the temporal hole of the 1st time flow), the observable masses correspond to 9/100 of the masses of our observable Universe.
The missing masses are divided in two kinds : masses corresponds to 9/10 of the initial horizon (temporal window of the 1st time flow : external horizon) and 1/100 of the doubled horizon (temporal hole of the 2nd time flow : internal horizon).
Outside our Universe, there are already missing masses which form other doubled Universes. Theses Universes are separated by six embedded horizons to obtain three other time flows. And so on...

6.5 The End of the Difference of our Three Time Flows or "our Times End"

Space and time scalings (Garnier-Malet, 1999, 2000) allow any particles to exchange their horizon during common temporal holes.
The end of our solar cycle allows this exchange in the final common temporal hole of the six embedded horizons of our three time flows (past, present, future).
This cycle of 25 000 years is the time to transform an external initial virtual horizon to an internal virtual particle. This doubling is non-observable. It uses temporal holes in a virtual horizon which seems to be a real particle. But now, it is the end of our solar temporal hole and the beginning of a temporal window of the initial external horizon.
Some planetary disturbances could arise.
When the differences of the three time flows will be finished, the stars will seem to go down in the sky because C_0 of the particle becomes C_1 of its horizon when C_1 of the particle becomes C_2 of its horizon
By a final juxtaposition of the six embedded horizons in the first common temporal window, any particle will know its past and its future to chose instantaneously its present.

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