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Pulsar astronomy today assumes strong magnetic fields that due to the revolution of the pulsars generate electromagnetic w aves that can be received on earth w ith a periodicity of 1/4 Hz to about 750 Hz.

The new theory offers a complete different approach and is able to explain (nearly) all effects that can be observed today. It also does not need such strong magnetic fields for explanation. The magnetic field involved w ith the new theory is about 12-15 decades (10^{12} - 10^{15}) smaller than today thought.

The basis are relatively fixed **areas** near or on the surface of pulsars that are **electricly charged**. One can assume that opposite charged areas are also about opposite on the pulsar sphere thus generating the light house effect. With these rotating charges a polarizing field is created at a preferred path aw ay from the pulsar.

These polarizing fields accelerate on one side electrons that w ill get a speed much higher than the escape speed of the pulsar. With increasing loss of electrons the pulsar gets positively charged more and more until on the opposite side protons w ill also reach the escape speed. For the protons the positive charge of the pulsar acts against the gravity of the pulsar, so that reaching the escape speed for protons is much easier than only by acceleration through the polarizing field path. When the point that as many protons reach the escape speed as electrons, a dynamic steady state is achieved, the positive charge of the pulsar does not further increase. In this state the pulsar can accelarate electrons as long as there are enough electrons.

In a static electric field all electrons that are in the field w ould be accelerated until no further electron is available for accelearation. The process of acceleration of electrons w ould come to an end relatively fast.

For the acceleration of electrons around pulsars this is completely different. The moving charges create a narrow path w here also the speed of the electrons is defined at each point along that path. This speed is low at the beginning and reaches its highest value w hen the graviatational forces gets stronger than the forces created by the polarizing field of the big charges. It can be compared or visualized w ith a fixed train track revolving w ith the pulsar that allow s at each point only a very narrow speed interval. Only those electrons that exactly meet the trac (like a narrow tube) and have the speed to be w ithin the narrow allow ed speed interval in direction of the track, only these electrons w ill be able to join (to jump into the train) the w hole track to escape the gravity field of the pulsar at high speeds. All other electrons w ill curve back to the pulsar, and w ill stay w ithin the system.

This electron acceleration has different results.

First is the **generation of electromagnetic waves through their acceleration** in the polarizing field.
As there is a fixed orientation (relative to the rotating charges) of the rotating magnetic and electric field the generated electromagnetic w aves w ill have a fixed polarisation angle at a certain point (now the orientation in space is meant).

This polarization angle that could be measured from several pulsars changes as long as the electron is accelerated under the influence of the rotating charges.

Second is, due to the increasing distance to the pulsar; the electric and magnetic forces decrease faster than the gravity forces, **the gravity force** becomes dominant and **de-accelerates** the escaping electrons to a certain degree. Now there is no major magnetic field involved so that no dominant polarization angle can be expected for this phase.

During this de-acceleration phase the electron also emits electromagnetic w aves. The electromagnetic w ave is travelling w ith c from the electron in direction of the pulsar. But due to the high speed of the electrons much higher than c this radiation is effectively directed into the velocity direction of the electron. So w e on earth can see or receive these electromagnetic w aves w ith a frequency shift according to the speed of the electrons. As long as the electrons have a speed (relative to earth) smaller than c no generated acceleration signal w ould reach earth. In the medium case w hen the electron velocity is betw een 1*c and 2*c w e w ill see the signals red shifted. If the speed is larger than 2*c w ill see the generated signals blue shifted.

A third important effect is the momentum created by each electron leaving the pulsar. This momentum is directed from the electrons in a small cone. If this cone rotates near the rotation axis of a pulsar each electron delivers a momentum on the pulsar. Summarizing the momentum in the rotation axis of the escaping electrons gives a continuous "**rocket propulsion**" for the pulsar.

The opposite side, the acceleration of the protons are not directed into one single direction, if they only achieve their escape speed and then leave the pulsar nearly tangential. Summing up the momentum from many protons during one revolution onto the pulsar gives a neglecting value along the rotation axis compared to the momentum created by the electrons. This now explains the different velocity directions of pulsars in the Milky Way. The direction is basically given by chance how the rotation axis establishes at the creation of the pulsar. Then in the life time the pulsar velocity increases. (In todays astrophysics it is thought, that the pulsar velocity is created by a "kick at birth". The big question here w ould be: how is it possible to arrive at such large speeds by a kick w ithout disrupting the pulsar ?)

In astrophysical measurements pulsars are typically located w ithing the galactic plane, w ith random direction and varying speed. Some have already left the plane and seem to continue their voyage aw ay from the plane . But there are also some pulsars that already have left the plane and now are heading back in direction to the galactic plane.

Also this strange behavior can be explained w ith the new model.
Here one can assume, that at the birth of the pulsar the electric charges of the pulsar are higher than at most other pulsars together w ith a relative high revolution rate. Under these circumstances not only the electrons create a momentum on the pulsar axis, but the escaping protons w ill also be accelerated in a small cone.generating a second "rocket propulsion" in the opposite direction. As the mass of a proton is about 1830 times larger than the mass of an electron, the "proton rocket engine" w as strongest for quite a w hile. With continuing time the neutron star looses energy through particle emission, the revolution per second decreases, so starting after some time the "electron rocket engine" takes over and the acceleration of the pulsar is inverted, going into the opposite direction.
Now this special type of neutron star became a regular neutron star as most others.

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