## Update 2 to the Reverse Lorentz Paper, of march 2017

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In the previous document I tried to implement a closed and switching fluxpath, which would have been very efficient in terms of fieldstrength, but after some simulation it turned out that it suffered from the "Lenz Drag", which is why I have to fall back to an older design, that is even much more elegant, although it may be a bit tricky to achieve high fieldstrength interaction.

It consists of a coil and a PM at the stator and a narrow horseshoe kind of iron rotor.

Principle of operation:

With no rotor between magnet and coil core, the filedstrength is at its max, despite the large airgap.

As the rotor comes closer, the fluxpath of the PM will use it while trying to get a better connection to its own opposite pole. Most of the flux will jump off this horseshoe or bent Iron path, so only a small amount of flux reaches the coil core, which is less than without the rotor. This drop of fieldstrength leads to the desired attraction caused by the coil while approaching. So by this secondary field the horseshoe rotor becomes more attractive for both, the coil core and the PM, while the rotor is coming coser. When the rotor has passed by, the filedstrength in the coil core is rising again, making the coil basicly repell the flux of the premanent magnet that still comes trough the horseshoe.

The total attraction of the rotor durng approaching is higher than during departure.



The top vertical bar is the stators coil core. At the bottom the stator PM. In the middle the rotor, containing this flux guide and diffusor. Note, size and shape are critical, if the horseshoe is to tall, the flux will not follow it, but jump the gap.



Here's the flux densitive plot. As can be seen, the fieldstrength in the coil core is rather low, despite the offered iron path. It must be of the right size and shape to lure the flux away, but not deliver it entirely to the coil core at the other end.

This design, after I thought trough it, suddently reminde me of Ed Leedskalnin's mysterious motor, so that may indeed be a possibility, also in context to his famous quote "I have a weak machine that runs only from the energy from the air" (or something along that line).

I did a manual test with this BEFORE I simulated it, but my "horseshoe" was just a roughly bended ironbar, even not pure iron, all just guessimated. Still, it seemed to me the coil, when placed manually, reduced the Lenz Drag and the rotor turned longer after a push.

The Reverse Lorentz Generator Principle, aka Negative Induction is still an interesting project of mine and I keep on testing and thinking. Thanks for reading.

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