Surrounding and dwarf galaxies

The dwarf galaxies are extremely testing in the Surrounding model because the model simulations I have done of a galaxy, not only retrieve the correct structure with well enrolled arms and bars (like does MOND) but also it generates ring galaxies and a high number of dwarf satellite galaxies. Those simulations show that Surrounding behaves like a big engine for creating dwarf galaxies.

And there is a mystery which is not very much knowned, which is that the dwarf galaxies are much more numerous in the observations, than what is predicted by today's version of relativity (Newton's law). Moreover, the dwarf satellites which are orbiting around the Milky-Way share the same galactic plane as the Milky-Way. Same thing for Andromeda galaxy (M31). And, also, this is not predicted by today's version of relativity.

But all this is a prediction of surrounding. Indeed, as written above, the 2D simulations show that numerous dwarf orbiting galaxies are created by the main central galaxy. Therefore they share the same galactic plane.

Let's try to understand why the simulations of Surrounding show that this model predicts a regular creation of dwarf galaxies from a big galaxy. The broad reason for that is that Surrounding creates a potential well which is the Surrounding sphere, around each amount of matter. The effect of this potential well is that this matter tends to be confined in this sphere. But let's study this in more details.

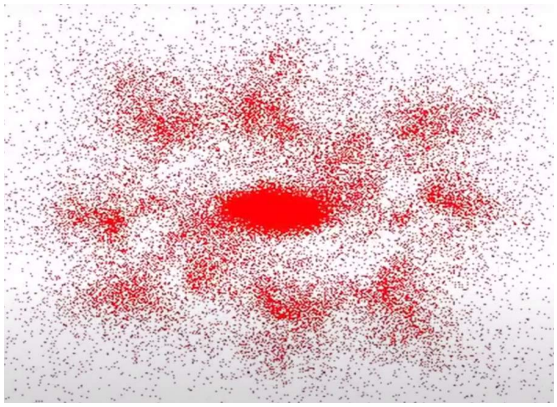
For this let's imagine a bunch of matter distributed along a given plane, in a symmetrical configuration. Let's call *B* this bunch of matter. Then, if the middle of *B* is called the *O* point, *B* is globally unchanged by a symmetry around *O*.

Then let's suppose that a *P* particle is escaping from *B*, and goes far from *O*. When the distance *PO* between *P* and *O* is greater than or equal to 15 *kpc*, the gravitational force will start to increase. This is because *B* will start to disappear from the Surrounding sphere which is located around *P*. When *PO* will be greater than 15 *kpc* + *r*, where *r* is the ray of *B*, then *B* will disappear completely from this surrounding sphere which is centered in *P*. At this stage the gravitational forces in *P* will be strongly increased by the Surrounding effect. Therefore, *B* will appears to *P* as if it were more « massive » (supposing Newton's law still valid). Suddenly *P* will be much more attracted by *B*. The result is that, most of the time, *P* will return back inside of *B*.

The above scenario shows that a dwarf galaxy is stable under the Surrounding model. But any distribution of matter will tend to regroup in bunchs of matter, like with Newton's law. As a result, any exchange of matter between the inside and the outside of a big galaxy will generate easily those stable bunchs of matter. This will be dwarf galaxies, orbiting of course around the big one, and sharing of course the same galactic plane.

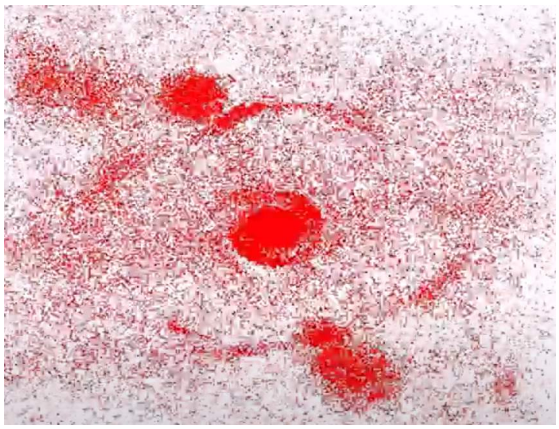
In some simulations the dwarf galaxies are bouncing back on the ring of the big galaxy. This illustrates the stabilty of dwarf galaxies in this model. I have put one of them on youtube because this one shows all the interesting behaviours of the simulations. You find it by searching on google for <<Structure of a simulated galaxy with the Surrounding gravitational model>>. Below are extracts from it.

Video at 5:0 sec :



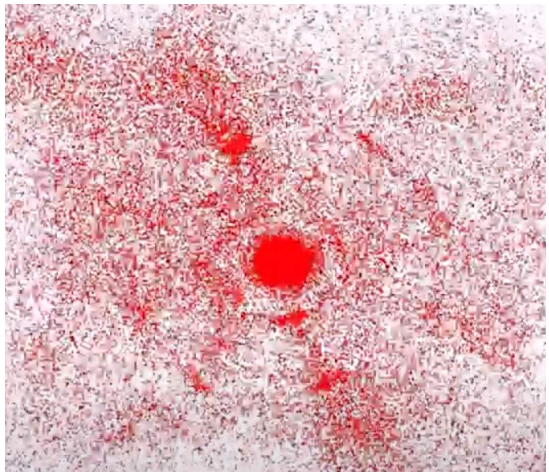
Formation of 8 bunchs of matter, in the spiral arms, which will dissolve quickly.

Video at 8:0 sec :



Formation of 2 dwarfs galaxies, one in the upper left, the other in the lower right of the picture.

Video at 8:0 sec, but slightly later :



The 2 dwarfs galaxies are formed. The one in the upper left will bounce 3 times, on the ring of the big galaxy.