

I need to make the windings for a permanent magnet linear generator. The only problem is how to connect together the three phases in star connection. I simplified the windings in order to see the problem without making the project too complicated. The solution, to this smaller problem, will apply to the real machine.

Let us start.

Let us create the windings of Figure 1, there are two coils per phase, and the frontal connections of the coils. The coil size and number is arbitrary, the project is in 3D and the solution type is “transient” and the units are in cm.

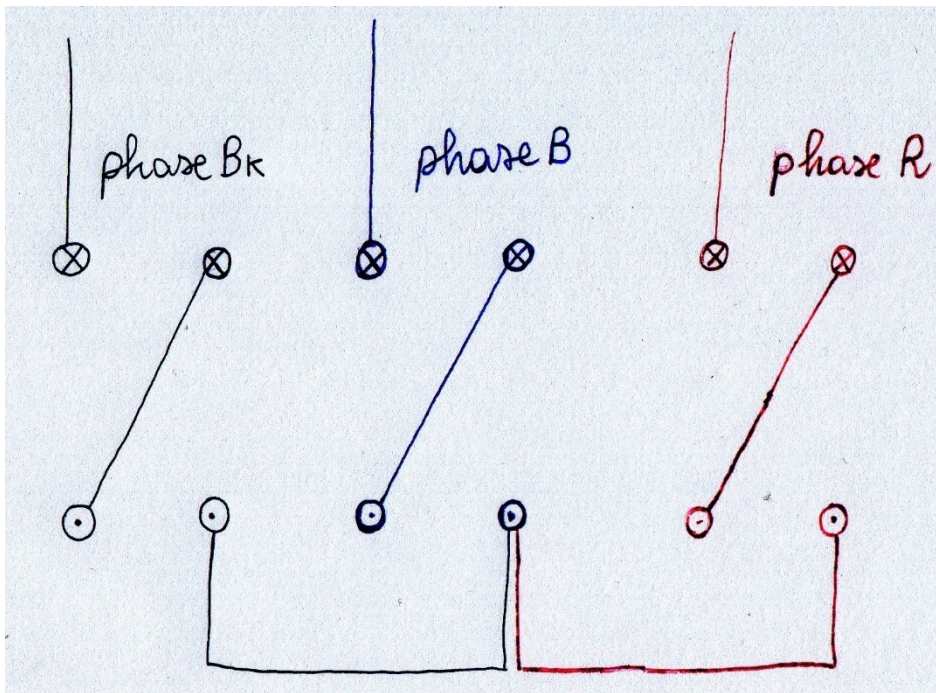
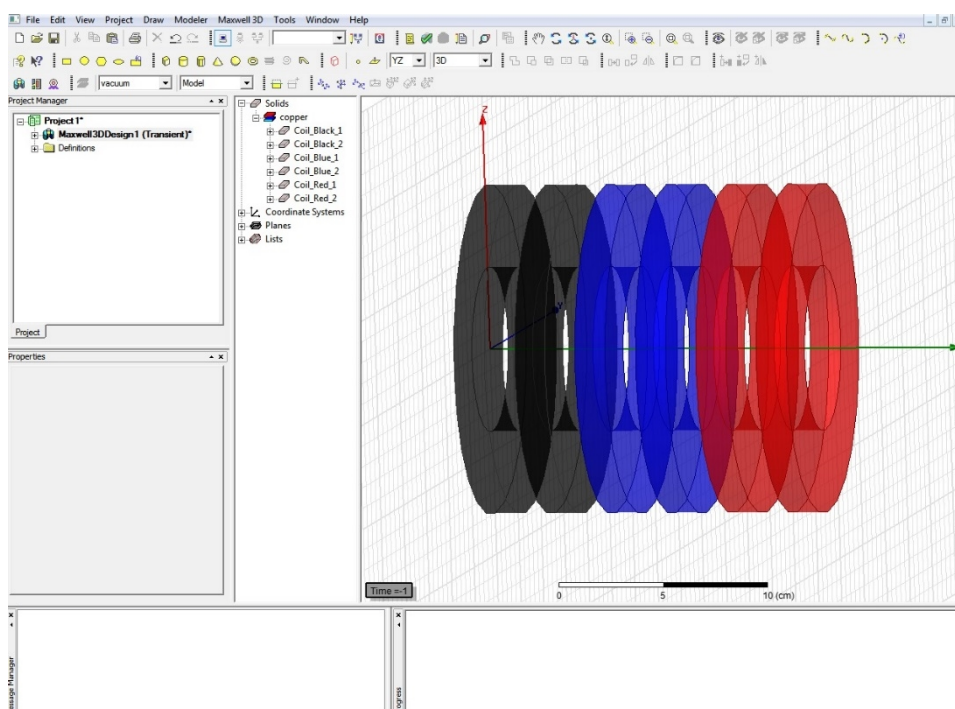
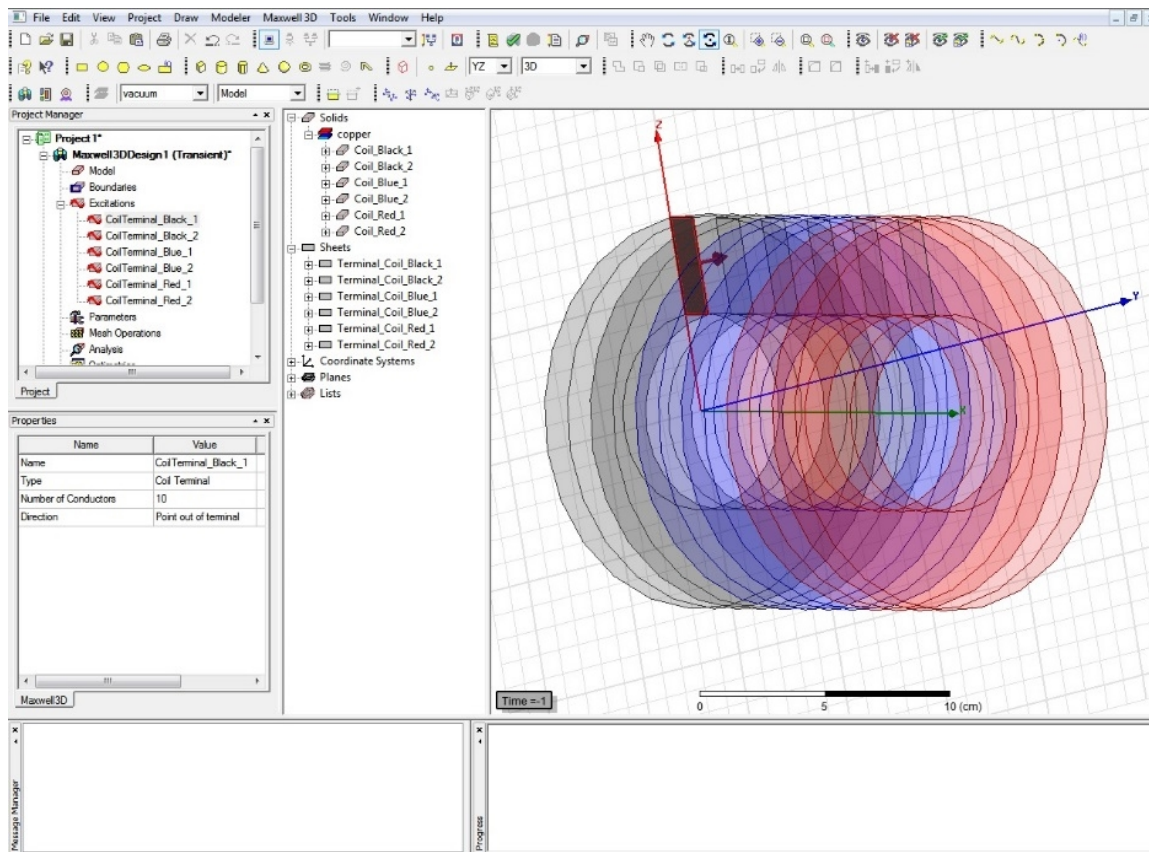


Figure 1

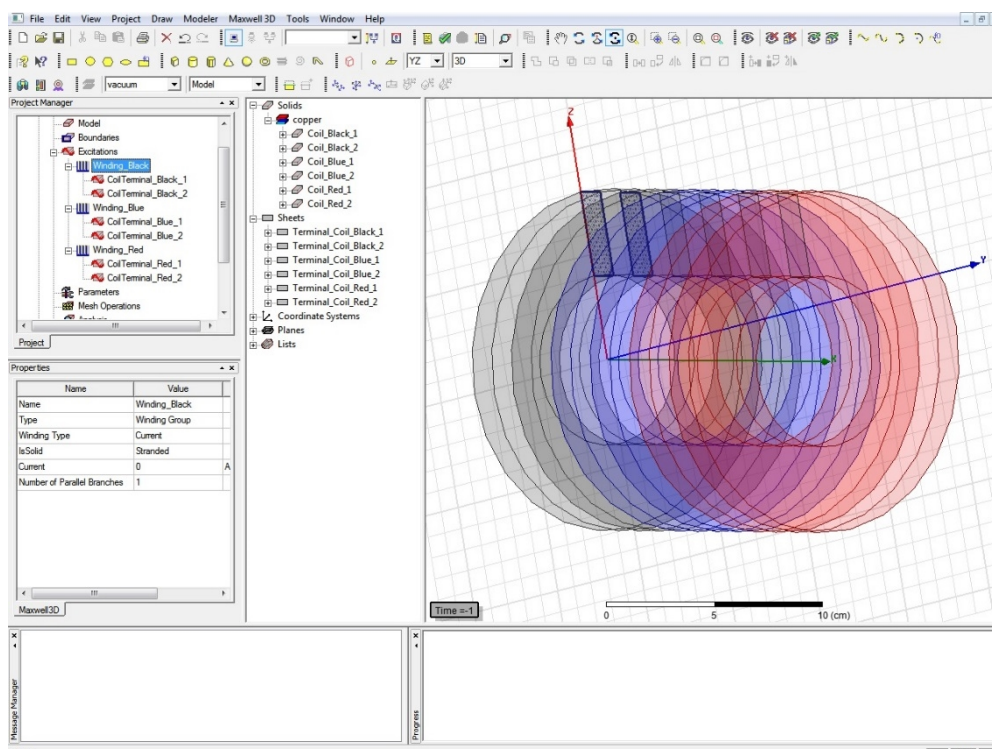
Let us draw the coils, by making 6 rings: Coil_Black_1, Coil_Black_2, Coil_Blue_1, Coil_Blue_2, Coil_Red_1, Coil_Red_2; let's change the material to copper, the colors and the transparency to 0.5 as shown in Figure 2.



Now let's make the terminals through the section and boolean functions, and assign the coils terminals, Number of conductors 10 and directed to the positive Y axis, as shown in Figure 3:



Now we make three windings: Winding_Black, Winding_Blue and Winding_Red. Type> current, Stranded, Current>0, Number of parallel branches>1. We assign, also, each terminal to the respective winding as shown in Figure 4:



How do we connect the three windings in star connection as in Figure 1, since we can only assign one terminal to each coil? Thank you.