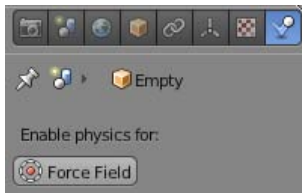
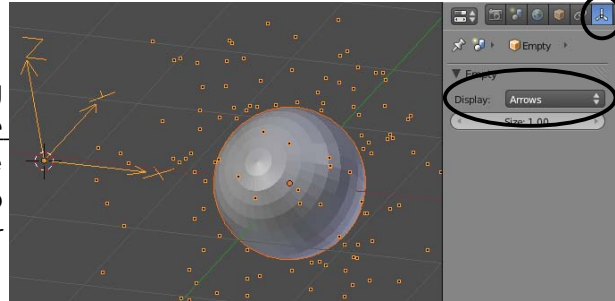


## Chapter 13- Particle Systems and Interactions

### Interaction With Forces:

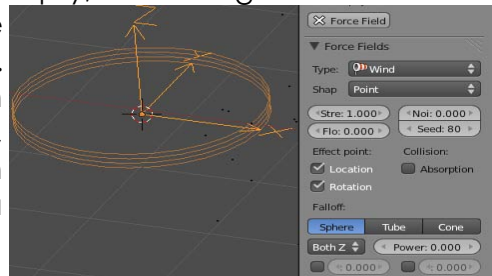
Particles are able to react to forces like wind. They can now be applied directly to the particle system (see *Force Field Settings* panel) or added to another object. By applying the effect to the particle system, it can effect itself or effect other particle systems. By applying a wind force to another object, it can be animated to simulate wind changing directions.

For the example to the right, we will be using an Empty as the wind force and a Sphere with a particle effect with zero gravity. The Empty's display has been changed to "Arrows" representation for better understanding.



With the Empty selected, go to the Physics panel and enable "Force Field". Select wind in the "Type" option and you will see several circles form on the Empty, indicating the force and direction. By default, the force will travel in the Z-direction.

Rotate the Empty to point in the direction you wish the wind to blow. You can then adjust the strength, noise and other settings. For more change, you can also animated these setting by pressing "I" over a setting and changing it over time.



These setting are similar to many of the other forces that can be used on an object. These forces can also be used on many of the other physics features that will be discussed in a later chapter (cloth, fluids, softbodies).

### Using Particles and Vertex Groups for Hair and Grass

At the beginning of the chapter we mentioned that particles can also be used to represent hair and grass. These features can be animated to react with forces and other objects. Hair can even be combed!

