## Chapter 12 – Convection flow in porous media

## 12.2 – Darcy Flow model

The darcy flow equation says that:

So:

The last equation is similar to the Hagen-Poiseuille result. This suggests that the Darcy flow is the macroscopic manifestation of a highly viscous flow through the pores of the permeable structure. represents a length-scale of the effective pore diameter.

The last length-scale is used to define the Reynolds number for the flow in porous media. We can discover also that Re\*f = 1. And in the limit O(Re) < 1, we can consider that the flow is laminar.

## 12.3 Equação da Energia

The basic idea is to divide the fluid flow region from the solid region and to apply the energy conservation equation for both regions.