Anish Script:

By comparing every weighted-signal image to the ‘baseline’, we can find how easily a magnetic current moves water for each direction. Where water can’t flow, we know a material like bone is blocking it; where it can, structures like a non-fatty tumour may be allowing it. These well documented properties allow us to visualise the brain in many helpful ways. By considering just average speed of water, physicians can quickly check for blood flow, swelling or infectious cysts. When visualising instead directional preference, the structures of white and grey matter become clear – highlighting traumas and dangerous chronic diseases. And by giving each direction of flow a colour, a ‘subway map’ of the brain’s wiring appears, guiding neurologists in complex procedures and in tracking the progression of diseases like multiple sclerosis or ALS.

Sometimes, the water diffuses in a way not physically possible, allowing us to flag and remove the faulty data and ensure an accurate image.