Definition of structure function

$$SF_2(\boldsymbol{l}) = \langle (\boldsymbol{B}(\boldsymbol{r}+\boldsymbol{l}) - \boldsymbol{B}(\boldsymbol{r}))^2 \rangle \tag{1}$$

You take a point at some random point $\boldsymbol{r}$ and another which is at distance $\boldsymbol{l}$ away from it. You calculate the difference between the magnetic fields at these two points and calculate the square of it. The brackets $\langle$ and $\rangle$ mean that you take an average over many such pairs of points. This gives the structure function at distance $\boldsymbol{l}$.

Now we are interested in the anisotropic structure function. It is defined in a slightly different way as

$$SF_2(r_\parallel, r_\perp) = \langle (\boldsymbol{B}(\boldsymbol{r} + l_\parallel \hat{b} + l_\perp \hat{b}_\perp) - \boldsymbol{B}(\boldsymbol{l}))^2 \rangle \tag{2}$$

Here we have split the vector $\boldsymbol{l}$ into two directions. For this we first randomly select a point $\boldsymbol{r}$. Then we calculate a local field $\boldsymbol{B}_{loc}$ around this point by taking average over some points in a sphere of radius $l = \sqrt{l_\parallel^2 + l_\perp^2}$. This defines the direction of local magnetic field $\hat{b} = \boldsymbol{B}_{loc}/|\boldsymbol{B}_{loc}|$. Then we also select a random unit vector which is parallel to $\hat{b}$ called $\hat{b}_\perp$. Now we take another point which is at a distance $l_\parallel$ in the parallel direction and $l_\perp$ in the perpendicular direction. This is the point labelled as $\boldsymbol{r} + l_\parallel \hat{b} + l_\perp \hat{b}_\perp$. Then like above the difference in the magnetic field is calculated between these two points and it is squared. Then the average is calculated by taking multiple pairs of points. This gives us a 2D anisotropic structure function $SF_2(r_\parallel, r_\perp)$, which you can then plot.