21.05.2024 Valeria Perseo an Alle 15:19 unlike iota

Matt Kriete an Alle 15:39

Regarding whether theta is an angle, my understanding is that there is an angle theta, which would be the angle between the "effective poloidal component" of the magnetic field (this is a different component for tokamaks vs stellarators). And the capital Theta we normally talk about is the sin of this actual angle theta

Valeria Perseo an Alle 15:19 Theta is also an actual angle

Thierry Kremeyer 15:21 Right, because it's defined in one toroidal plane?!

Amit Kharwandikar 15:22 I think it's a local property for a field line

Thierry Kremeyer 15:27 https://www.researchgate.net/profile/Winnie-Svendsen/publication/228694867/figure/fig9/AS:301975800434704@1449008049659/Measu rement-geometry-and-magnetic-field-line-pitch-angle.png Out of: https://pubs.aip.org/aip/rsi/article/72/6/2579/436610/CO2-laser-based-two-volumecollective-scattering So THETA describes the angle between B(phi) and B(R), while iota uses B(phi) and B(theta). Is this a correct summary?

Valeria Perseo 15:34 I think not entirely

Valeria Perseo 15:34 here there are all the definition listed https://iopscience.iop.org/article/10.1088/1361-6587/ac9ed9

Victoria Winters 15:35 Kobayashi also defines it in his paper: https://iopscience.iop.org/article/10.1088/0029-5515/55/10/104021/pdf

Valeria Perseo 15:41 actually, according to Kobayashi's paper, the most generic definition of Theta seems to be Br/Bt, so I might be wrong myself. In the island divertor context, Theta depends both on the island poloidal field (that has the shear in it) and the radial field (which depends on the poloidal and toroidal angles as normally defined)

Thierry Kremeyer 15:49 Wouldn't the island poloidal field be taken into account with the B\_r, if it sums up all local radial field components? Don't know if B\_r does that though

Victoria Winters an Alle 15:53 Would it make sense to mention SMoLiD/the power shell in the slide? I think this is also a nice toolset that has been developed.

Felix Reimold an Alle 16:14 We don't need to close toroidally! This is a poloidal closure mainly. Valeria Perseo an Alle 15:19 and it can be defined also without islands (like for tokamaks)

Thierry Kremeyer 15:24

This I believe I could also do with iota, using the d(theta)/d(phi) definition, rather than full poloidal/toroidal transits

Valeria Perseo 15:30 if I am not mistaken, Theta for tokamaks is defined as the ratio between poloidal field over total field, so it wouldn't be exactly the same as d(theta)/d(phi)

Felix Reimold 16:13 The problem is that this is the island internal theta and iota and not the main one. This is not an issue for a tokamak... Knowing the reference (without the island) is the problem.

Thierry Kremeyer 16:15 But in a Tokamak the PFR for a homoclinic single null configuration also has and internal theta and iota, right? If I see a Tokamak divertor as a 0/1 island