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Propagation and annihilation of threading dislocations during offaxis growth of heteroepitaxial diamond films

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Highlights:

- Threading dislocations have been analysed in heteroepitaxial diamond films
- Edge type and mixed type dislocations have been identified
- Off-axis growth induced tilting of the dislocation lines has been observed
- Tilting strongly depends on the local surface normal and is influenced by nitrogen in the gas phase
- In nitrogen free films differences in tilt angle can be explained by differences in the Burgers vector and the corresponding glide plane

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