

Auroral kilometric radiation

Auroral kilometric radiation (AKR) is bursty [electromagnetic emission](#) at about 100 - 500 kHz related to auroral [arcs](#). Because of this connection to [discrete aurora](#), [field-aligned potential drops](#) must play some role in their production. The source region altitude is about 3000 - 20000 km; however, at a given time only a small altitude range is operational.

The radiation is believed to be generated at frequencies near the local electron cyclotron frequency f_{ce} , which often acts as low-frequency cutoff for the waves. It is composed of both extraordinary and ordinary modes, with the extraordinary mode dominating (see [Waves in cold plasma](#)).

For more information see, e.g., Bahnsen et al. (1989).

References

- Bahnsen, A., B. M. Pedersen, M. Jespersen, E. Ungstrup, L. Eliasson, J. S. Murphree, R. D. Elphinstone, L. Blomberg, G. Holmgren, and L. J. Zanetti, Viking observations at the source region of auroral kilometric radiation, *J. Geophys. Res.*, 94, 6643-6654, 1989.