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## Smith-Purcell radiation from a ribbon beam as effective THz source

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Electrons moving above a periodic dielectric structure generate Smith-Purcell radiation (SPR). SPR may serve for noninvasive bunch diagnostics and also as a good source of THz radiation [1, 2]. In the present report we suggest using a ribbon beam in order to enhance the effective interaction between the beam and grating. In our previous works [3,4] we used the scheme with cylindrical symmetry, whereas here we construct the theory of SPR for the flat beam and flat grating from the first principles, calculate spectral and angular distributions of radiation, and analyze the radiation characteristics in THz range for the parameters of LUCX (KEK).

### References

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