Contribution ID: **107** Type: **Oral presentation**

Effects of spatial coherency in coherent polarization radiation (transition radiation, Cherenkov radiation, parametric X-radiation).

Monday, 26 September 2016 11:20 (30 minutes)

Processes of coherent radiation such as transition radiation, Cherenkov radiation, X-ray parametric radiation generated by «pancake-like» short electron bunches with any angle ψ between bunch axes and it's velocity were investigated. There was shown that the angle of maximal radiation yield of transition radiation is determined by the tilt angle ψ for all cases even if such an angle is much higher than 1/γ (γ is the Lorentz-factor). The significant distortion of angular distributions is observed for Cherenkov radiation and X-ray parametric radiation also.

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Session Classification: S1.2: Channeling & Radiations in Crystals