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Backward X-ray TR from a Multilayered Structure

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Backward transition radiation (BTR) is used at accelerators as a precise instrument for beam diagnostics. Being conventionally used in optical range, BTR based monitors are promising for submicron diagnostics, provided EUV and soft X-ray range is operated. Despite the theory of TR is very well developed, however, to the best of our knowledge the theory of backward TR from multilayered structures for arbitrary angles of incidence does not exist so far.

We suggest a new and comparatively simple theoretical description of X-ray and EUV BTR from multilayered targets. For this aim we use Weizsäcker-Williams method of pseudophotons combined with the methods of X-ray optics in multilayered structures. Also, we compare the results with those obtained in well-known limiting cases, like and BTR for a normal incidence and X-ray BTR from a single plate.

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