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
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New Aspects of Vavilov-Cherenkov Radiation

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Abstract: The effects arising from accelerated and decelerated motion of charged point particles inside a medium are studied. It is shown explicitly that, in addition to the bremsstrahlung and Cherenkov shock wave, the electromagnetic shock wave arising from the charge velocity exceeding the medium light velocity should be observed. This shock wave has the same singularity as the Cherenkov one and therefore, it is more singular than the bremsstrahlung shock wave. The space-time regions where these shock waves exist and conditions under which they appear are determined.



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