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General method of short-range wakefield calculation for corrugated structures of arbitrary shape

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Corrugated structures have been used widely in X-ray free-electron laser facilities for chirp control, fresh-slice applications, and diagnostics. In this paper, we present a general method for calculating the short-bunch wakefield of corrugated structures with arbitrary shapes. At zeroth order, we give analytical solutions via the method of conformal mapping. At first order, we give steady-state wake calculation by solving a set of integral equations.

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Footnotes

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Yes

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