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## Marshall–Palmer relation

The  $Z$ – $R$  relationship developed by J. S. Marshall and W. M. Palmer (1948) consistent with an exponential drop-size distribution.

The relationship is  $Z = 200R^{1.6}$ , where  $Z$  ( $\text{mm}^6 \text{ m}^{-3}$ ) is the reflectivity factor and  $R$  ( $\text{mm h}^{-1}$ ) is the rainfall rate. The relationship is sometimes generalized to the form  $Z = aR^b$ , where  $a$  and  $b$  are adjustable parameters.

Marshall, J. S., and W. McK. Palmer, 1948: The distribution of raindrops with size. *J. Meteor.*, **5**, 165–166.

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- This page was last modified on 15 February 2017, at 16:02.
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