

**ZMATH 2016f.01298**

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**Examining student conceptions of covariation: a focus on the line of best fit.**

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Summary: The purpose of this research study was to learn about students' conceptions concerning the line of best fit just prior to their introduction to the topic. Task-based interviews were conducted with thirty-three students, focused on five tasks that asked them to place the line of best fit on a scatterplot and explain their reasoning throughout the process. The results include descriptions and categorizations of students' meanings, criteria and methods for placement, accuracy of placement, and interpretation of the line of best fit. The discussion addresses how students' prior study of mathematics and statistics impacted their conceptualizations of the line of best fit as well as implications for the teaching and learning of the line of best fit.

*Classification:* K83 K43 N53

*Keywords:* stochastics; statistics; teaching; statistical association; linear regression; least squares; line of best fit; scatterplots; educational research; lower secondary; task-based interviews; student knowledge; statistical reasoning

<http://ww2.amstat.org/publications/jse/v23n1/casey.pdf>