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Goal. The mathematics of a penalty shoot-out in a football game.

Galbraith, Peter (ed.) et al., Proceedings of the 8th international conference on technology in mathematics teaching, ICTMA 8. Mathematical modelling: teaching and assessment in a technology-rich world, Brisbane, Australia, August 1997. Horwood Publishing, Chichester (ISBN 1-898563-42-X). 159-167 (1998).

Am Beispiel des Elfmeter-Schiessens werden Möglichkeiten aufgezeigt, wie man durch die Analyse mathematischer Modelle Mathematiklernen mit Sinn erfüllen kann. Die Hauptfrage ist: "Gibt es eine Stelle im Tor, die es für den Torhüter unmöglich macht, den Strafstoß zu halten?" Nach der Konstruktion relevanter Modelle helfen Powersim und Excel bei Schlussfolgerungen.

In this chapter we discuss the problem of the penalty shoot-out as a case to show the possibilities for making sense and learning mathematics in secondary school through the analysis of mathematical models. The main question is: "is there any place at the goal post where the player could shoot the ball making it impossible for the goalkeeper to stop it?" After the construction of relevant mathematical models, experiences with Powersim and Excel can lead us to conclusions about the possibility of scoring a goal. (Orig.)

Classification: M94