Topic 3: *Moving the Goalposts* Approach

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Key points:

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3.1 Finite Sample Bias-Variance Tradeoffs

3.1.1 Setup

Consider the fixed design regression model

$$y_i = w_i \beta (z_i) + h (z_i) + \epsilon_i \tag{3.1}$$

where

- w_i, z_i are treated as **fixed**
- ϵ_i is **independent**, with $\mathbb{E}[\epsilon_i] = 0, \mathbb{E}\left[\epsilon_i^2\right] = \sigma_i^2$

References

Timothy B Armstrong, Michal Kolesár, and Soonwoo Kwon. Bias-aware inference in regularized regression models. *arXiv preprint arXiv:2012.14823*, 2020.