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uncertainties; 2.4 Specifying prior beliefs; 2.4.1 Example: oral glucose tolerance test; 2.5 Qualitative and quantitative prior specification
2.6 Example: qualitative representation of uncertainty2.6.1 Identifying the quantities of interest; 2.6.2 Identifying relevant prior information; 2.6.3 Sources of variation; 2.6.4 Representing population variation; 2.6.5 The qualitative representation; 2.6.6 Graphical models; 2.7 Example: quantifying uncertainty; 2.7.1 Prior expectations; 2.7.2 Prior variances; 2.7.3 Prior covariances; 2.7.4 Summary of belief specifications; 2.8 Discussion: on the various methods for assigning expectations; 3 Adjusting beliefs; 3.1 Adjusted expectation; 3.2 Properties of adjusted expectation
3.3 Adjusted variance3.4 Interpretations of belief adjustment; 3.5 Foundational issues concerning belief adjustment; 3.6 Example: one-dimensional problem; 3.7 Collections of adjusted beliefs; 3.8 Examples; 3.8.1 Algebraic example; 3.8.2 Oral glucose tolerance test; 3.8.3 Many oral glucose tolerance tests; 3.9 Canonical analysis for a belief adjustment; 3.9.1 Canonical directions for the adjustment; 3.9.2 The resolution transform; 3.9.3 Partitioning the resolution; 3.9.4 The reverse adjustment; 3.9.5 Minimal linear sufficiency; 3.9.6 The adjusted belief transform matrix
3.10 The geometric interpretation of belief adjustment3.11 Examples; 3.11.1 Simple one-dimensional problem; 3.11.2 Algebraic example; 3.11.3 Oral glucose tolerance test; 3.12 Further reading; 4 The observed adjustment; 4.1 Discrepancy; 4.1.1 Discrepancy for a collection; 4.1.2 Evaluating discrepancy over a basis; 4.1.3 Discrepancy for quantities with variance zero; 4.2 Properties of discrepancy measures; 4.2.1 Evaluating the discrepancy vector over a basis; 4.3 Examples; 4.3.1 Simple one-dimensional problem; 4.3.2 Detecting degeneracy; 4.3.3 Oral glucose tolerance test
4.4 The observed adjustment

Sommario/riassunto

Bayesian methods combine information available from data with any prior information available from expert knowledge. The Bayes linear approach follows this path, offering a quantitative structure for expressing beliefs, and systematic methods for adjusting these beliefs, given observational data. The methodology differs from the full Bayesian methodology in that it establishes simpler approaches to belief specification and analysis based around expectation judgements. Bayes Linear Statistics presents an authoritative account of this approach, explaining the foundations, theory, methodol