

the yet-to-be-detected particles. To the author, it is a convenient compilation of problems forced together under the leaky umbrella of dark matter.

Given that the book is sympathetic toward modifications of Newtonian gravity, I would have liked to see more details about MOND. What is the form of the function that interpolates between Newtonian and MOND regimes in the force law? Can MOND account for the observed temperature fluctuations in the cosmic microwave background? How does the cosmic network of galaxies and clusters develop in MOND? What about the extra fields introduced in the tensor-vector-scalar theory, a relativistic version of MOND?

On the whole, *The Dark Matter Problem* will benefit advanced undergraduates, graduate students, and some researchers. I can imagine two different ways in which the author's nonstandard view of dark matter will play out with the reader. Nonspecialists might buy the narrative wholesale and believe that MOND is a competitive alternative—a conclusion at odds with the consensus of researchers. (Although the fraction of MOND papers has tripled since tensor-vector-scalar theory was introduced in 2004, they still make up only 3% of the papers that deal with the same “problems” addressed by dark matter.) Students and professionals working in the field may receive this book as a training tool that highlights the current deficiencies of the dark-matter paradigm. Understanding those deficiencies is an important part of the learning process.

Liliya L. R. Williams
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Minneapolis

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