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Abstract for an Invited Paper for the DAMOP16 Meeting of the American Physical Society

## Unraveling the mystery of Dark Matter

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Dark Matter constitutes a significant component of the energy budget of our Universe and we have diagnosed its existence through its gravitational interaction with us. Our theories of Dark Matter though predict that this glue that is responsible for the existence of our Galaxy should also interact with us in non-trivial ways. After I review these ideas, I will discuss how we can learn more about the properties of Dark Matter in a variety of new experiments, ranging from atomic clocks to black holes and gravitational waves.