

Can micro-lensing effects help to distinguish between the models for the BAL region of QSOs?

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Abstract: Approximately 10% of the QSOs show broad absorption lines (BAL) in their spectra which, if interpreted in terms of Doppler velocities, reveal the presence of high velocity outflows. One of these BAL QSOs (H1413+117) is known to be gravitationally lensed; it may therefore also be subject to micro-lensing effects, different line forming regions being selectively magnified. Since BALs are formed in front of the continuum emitting region while the broad emission lines originate from more extended regions, differential effects are expected.

Considering current models for the BAL region, we have investigated the effects of moving micro-lenses on the line profiles. We find that the predicted line profile variations induced by micro-lensing effects strongly depend on the adopted BALR model; a regular spectroscopic monitoring of lensed BAL QSOs is therefore highly desirable to distinguish between the various proposed BAL models. A more detailed account of this work will be published elsewhere (see references).

References

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