

Abstract Submitted  
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**MHD Turbulence and the FIP Effect**<sup>1</sup> MARTIN LAMING, Naval Research Laboratory — The First Ionization Potential (FIP) Effect is the by now well known abundance anomaly in the solar corona and slow speed solar wind, where elements with FIP less than about 10 eV (e.g. Fe, Mg, Si) are enhanced in abundance by a factor of about 3-4. High FIP elements (e.g. C, O, Ar) are essentially unchanged, while the highest FIP element, He, is depleted by a factor of about 0.5. A similar, though reduced abundance anomaly is found in the fast speed solar wind, and in coronal holes. These element fractionations are best explained by the action of the ponderomotive force in the solar chromosphere, arising as Alfvén waves reflect from the strong density gradients. Chromospheric ions, but not neutrals, are preferentially accelerated upwards. I will describe some recent developments, including the parametric generation of slow mode waves by the Alfvén wave driver, that now allows both the enhancement of Fe, Mg, S, etc, and the depletion of He to occur simultaneously.

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