1049-05-211   **Raman Sanyal*** (`sanyal@math.berkeley.edu`). *b-transshipments, modular flow reciprocity, and a combinatorial interpretation of the Tutte polynomial.*

In analogy to the beautiful reciprocity for the chromatic polynomial of a graph we give a combinatorial interpretation for the values of the modular flow polynomial evaluated at a negative integer. The proof involves Ehrhart polynomials of a family of b-transshipment polytopes that encode the combinatorial objects in question. With the modular flow reciprocity we can give a combinatorial meaning to (almost) all evaluations of the Tutte polynomial of a graph. This is joint work with Felix Breuer. (Received March 04, 2009)