1067-81-1173   **Iana I Anguelova*** (`anguelovai@cofc.edu`), College of Charleston, Math Department, 66 George Street, Charleston, SC 29424. *Bicharacter construction for boson-fermion correspondences.* Preliminary report.

The charged free boson-fermion correspondence plays an important role in the representation theory of the a_∞ algebra, as well as for the KP hierarchy. It is an isomorphism between two super vertex algebras (and so with singularities in the OPEs only at $z = w$). The boson-fermion correspondence of type B plays a similar role in the representation theory of the b_∞ algebra and for the BKP hierarchy. The vertex operators describing it have singularities in the OPEs at both $z = w$ and $z = -w$, and thus need a more general notion than a super-vertex algebra. This is the simplest, and important, example of what we call a "T-generalized vertex algebra" (with singularities in the OPEs at $z = \epsilon w$, where ϵ is a root of unity). In this talk we present a bicharacter construction of the boson-fermion correspondence of type B as isomorphism of T-generalized vertex algebras. This bicharacter structure is then used for studying the properties of the T-generalized vertex algebras. Further, a similar bicharacter construction is used for producing other examples of boson-fermion correspondences. Partly joint with Maarten Bergvelt, UIUC. (Received September 23, 2010)