Vertex operator approach for correlation functions of Belavin's Z_n symmetric model

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In this talk I considered Belavin's $(\mathbb{Z}/n\mathbb{Z})$-symmetric model [1] on the basis of bosonization of vertex operators in the $A_{n-1}^{(1)}$ model [2] and vertex-face transformation. This is $sl(n)$-generalization of Lashkevich-Pugai's construction [3], in which the integral formulae were presented for correlation functions of Baxter's eight-vertex model [4] using bosonization of vertex operators in the eight-vertex SOS model [5] and vertex-face transformation.

First I notice that the $A_{n-1}^{(1)}$ model [6] is a restricted model, but in the present purpose, I should use unrestricted $A_{n-1}^{(1)}$ model. Second I notice that the original vertex-face correspondence [6] maps the $A_{n-1}^{(1)}$ model in regime III to $(\mathbb{Z}/n\mathbb{Z})$-symmetric model in the disordered phase. I should relate the former with $(\mathbb{Z}/n\mathbb{Z})$-symmetric model in the antiferroelectric phase.

I constructed a free field representation of the non-local operator $\Lambda(u)$, the unremovable tail of the intertwining vectors. The matrix element of $\Lambda(u)$ can be expressed in terms of screening operators. Using this result and free field representations of $\rho_{lk}^{(i)}$ and $\Phi(u)_a^{a'}$, the product of the corner transfer matrices and the vertex operators of the $A_{n-1}^{(1)}$ model, integral formulae for correlation functions of $(\mathbb{Z}/n\mathbb{Z})$-symmetric model can be obtained. Furthermore, I showed that the spontaneous polarization of this model thus calculated reproduce the result by myself [7].

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