is proportional to

$$\mathfrak{D}_{\mathfrak{J}_D}^{\mathfrak{J}_B,(1,0;AB^{-1})} T_{\mathfrak{J}_D}(z),$$

where $\mathfrak{D}_{\mathfrak{J}_D}^{\mathfrak{J}_B,(1,0;AB^{-1})}$ is given by ().

1 Koornwinder limit of the trinion

We compute here the index of the three punctured sphere in the Koornwinder limit. The only subtle issue is the evaluation of the integrals in the function H (**??**). The integral can be interpreted as index of two coupled SU(2) gauge theories with five flavors. The integrand does not have a good limit however by manipulating it using Seiberg dualities we can show that the limit is well defined and evaluate all the integrals. We will discuss the evaluation of this function here. To evaluate H we first perform Seiberg duality on w_2 splitting to five flavors in particular way, leading to SU(3) theory with five flavors

$$\big((qp)^{\frac14}A^{-\frac12}tbz_1^{\pm1},(qp)^{\frac14}A^{\frac12}a^{-1}tv_1^{\pm1},(qp)^{\frac14}A^{-\frac12}b^{-1}z_2^{-1}\big),$$
$$\big((qp)^{\frac12}\frac{1}{t^2}w_1^{\pm1},(qp)^{\frac14}A^{\frac12}av_2^{\pm1},(qp)^{\frac14}A^{-\frac12}b^{-1}z_2\big),$$

which leads to no w_2 flavors having negative powers of p. We have the mesons

$$(qp)^{\frac34}A^{-\frac12}t^{-1}bz_1^{\pm1}w_1^{\pm1},\ (qp)^{\frac34}A^{\frac12}a^{-1}t^{-1}w_1^{\pm1}v_1^{\pm1},\ (qp)^{\frac34}t^{-2}A^{-\frac12}b^{-1}z_2^{-1}w_1^{\pm1},$$
$$(qp)^{\frac12}batz_1^{\pm1}v_2^{\pm1},\ (qp)^{\frac12}tAv_2^{\pm1}v_1^{\pm1},\ (qp)^{\frac12}A^{-1}b^{-2},$$
$$(qp)^{\frac12}A^{-1}z_2tz_1^{\pm1},\ (qp)^{\frac12}ab^{-1}v_2^{\pm1}z_2^{-1},\ (qp)^{\frac12}tb^{-1}a^{-1}z_2v_1^{\pm1},$$

and the new charged fields are

$$\square_{\mathrm{SU}(3)_{w_2}}:\ (pq)^{\frac16}A^{\frac13}b^{-\frac23}t^{\frac13}a^{-\frac23}z_2^{-\frac13}z_1^{\pm1},\ (pq)^{\frac16}A^{-\frac23}b^{\frac13}t^{\frac13}a^{\frac13}z_2^{-\frac13}v_1^{\pm1},\ (qp)^{\frac16}A^{\frac13}b^{\frac43}t^{\frac43}a^{-\frac23}z_2^{\frac23},$$
$$\overline{\square}_{\mathrm{SU}(3)_{w_2}}:\ (qp)^{\frac1{12}}t^{\frac23}A^{\frac16}a^{\frac23}b^{-\frac13}z_2^{\frac13}w_1^{\pm1},\ (qp)^{\frac13}A^{-\frac13}b^{-\frac13}t^{-\frac43}a^{-\frac13}z_2^{\frac13}v_2^{\pm1},\ (qp)^{\frac13}A^{\frac23}b^{\frac23}t^{-\frac43}a^{\frac23}z_2^{-\frac23},$$

and all of these fields have a good limit when p goes to zero and the fugacities are scaled. We note that some of the mesons charged under w_1 form mass terms with some of the quarks and after the first Seiberg duality we have four flavors of w_1

$$\big((qp)^{\frac14}A^{\frac12}bz_2,(qp)^{\frac1{12}}A^{\frac16}t^{\frac23}a^{\frac23}b^{-\frac13}z_2^{\frac13}\left(w_2^j\right)^{-1}\big),$$
$$\big((qp)^{\frac14}A^{\frac12}bz_2^{-1},(qp)^{\frac14}A^{-\frac12}a^{-1}v_2^{\pm1},(qp)^{\frac34}A^{-\frac12}t^{-2}b^{-1}z_2^{-1}\big),$$