大気中の3次元波動のエネルギーフラックスの診断表式

	Orlanski and Sheldon 1993 MWR	Aiki et al. 2021 JAS
現状	$\rho_0\left\langle\!\left\langle u'p'+\dfrac{\partial}{\partial y}\!\left(\dfrac{p'p'}{2f}\right),\, v'p'-\dfrac{\partial}{\partial x}\!\left(\dfrac{p'p'}{2f}\right),\, w'p'\right\rangle\!\right\rangle$	$\left(\dfrac{\partial^2}{\partial x^2}+\dfrac{\partial^2}{\partial y^2}\right)\varphi^{app}+\dfrac{1}{\rho_0}\dfrac{\partial}{\partial z}\!\left(\dfrac{\rho_0 f^2}{N^2}\dfrac{\partial\varphi^{app}}{\partial z}\right)$ $=\dfrac{\partial v'}{\partial x}-\dfrac{\partial u'}{\partial y}+\dfrac{1}{\rho_0}\dfrac{\partial}{\partial z}\!\left(\dfrac{g\rho_0 f}{N^2\theta_0}\theta'\right)$ $\rho_0\left\langle\!\left\langle u'p'+\dfrac{\partial}{\partial y}\!\left(\dfrac{p'\varphi^{app}}{2}\right),\, v'p'-\dfrac{\partial}{\partial x}\!\left(\dfrac{p'\varphi^{app}}{2}\right),\, w'p'\right\rangle\!\right\rangle$
予想	$\rho_0\left\langle\!\left\langle u'p'+\dfrac{\partial}{\partial y}\!\left(\dfrac{p'p'}{2[f-\bar{u}_y]}\right),\, v'p'-\dfrac{\partial}{\partial x}\!\left(\dfrac{p'p'}{2[f-\bar{u}_y]}\right),\, w'p'\right\rangle\!\right\rangle$	$\left(\dfrac{\partial^2}{\partial x^2}+\dfrac{\partial^2}{\partial y^2}\right)\varphi^{app}+\dfrac{1}{\rho_0}\dfrac{\partial}{\partial z}\!\left(\dfrac{\rho_0[f-\bar{u}_y]^2}{N^2}\dfrac{\partial\varphi^{app}}{\partial z}\right)$ $=\dfrac{\partial v'}{\partial x}-\dfrac{\partial u'}{\partial y}+\dfrac{1}{\rho_0}\dfrac{\partial}{\partial z}\!\left(\dfrac{g\rho_0[f-\bar{u}_y]}{N^2\theta_0}\theta'\right)$ $\rho_0\left\langle\!\left\langle u'p'+\dfrac{\partial}{\partial y}\!\left(\dfrac{p'\varphi^{app}}{2}\right),\, v'p'-\dfrac{\partial}{\partial x}\!\left(\dfrac{p'\varphi^{app}}{2}\right),\, w'p'\right\rangle\!\right\rangle$

p' はジェオポテンシャル（=圧力 / 基準密度）