Goldstein 9.2 [P] = [cosd -sind] [P] PJ = [-SAND GOOD] [Q] $\frac{16}{19} = \cos d$, $\frac{1}{3p} = \cos d$ (check) $\frac{\partial Q}{\partial p} = -smd$, $-\frac{\partial Q}{\partial p} = smd$. (check) $\left(\frac{Jq_1}{Jq_1}\right)_{q,p} = \left(\frac{Jp_1}{Jp_1}\right)_{Q,p} \left(\frac{Jq_1}{Jp_2}\right)_{q,p} = \left(\frac{Jq_1}{Jp_1}\right)_{Q,p}$ 3 satisfied, thus the trans. is canonical. The meetrix form of the transformations illustrate the physical significance of this trans- in phase space.

Q = cosd q - Smdp P = smagt cisap q = cosd Q + sind P P = -sindQ + cosd P P = - Smd [cosd q - Smd p] + cosd P = SM2dp-Sm+cosdq+CosdP (Asma) p = cosa P - Sina cosa q p= rosa P - snd q Q = cosd 9 - Sind P = Cosd 9 - Smd (-smdQ+cosd P) = Sm2dQ - SmdcosdP+losdq HESTA (1-5m2d) Q = cosd q - smd cosd P, Q = cosd q - smd P dFz 1 cosa p - sind of the cosa p - sind p cosa p Fz = 1 pq - 1 sind q2 - 1 sind p2 cosd p2 cosd p2 It to the dismissions will that the equilibrium pos

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