We put,

$\varepsilon_1 = \mathrm{P\,E_0}$, the obliquity of the equator to the zero ecliptic;

$k = \mathrm{E\,E_0}$, the inclination of the two ecliptics;

Π_0, the longitude of the node of the ecliptic on the zero ecliptic, measured from the zero equinox of the date;

Π_1, the longitude of the same node, measured from the actual equinox;

λ, the arc of the equator intercepted between the two ecliptics, or the planetary precession on the equator;

ψ, the total lunisolar precession on the zero ecliptic from the zero epoch to the actual epoch;

n, the rate of motion of the pole of the equator;

τ, the time, expressed in units of 250 years from the zero epoch to any other epoch.

The position of the variable point E is defined by the quantities k and Π_0 or Π_1, which are themselves to be determined through the values of $\varkappa$ and L of § 100.

The position of the variable point P is determined by the condition that its motion is constantly at right angles to the arc EP, and its velocity measured on the arc of a great circle is given by the equation

$$\frac{ds}{dt} = n = \mathrm{P} \sin \varepsilon \cos \varepsilon \qquad (a)$$

The positions of the equator and equinox relative to the zero equator and ecliptic are then determined by the quantities ε_1, ψ and λ. The spherical triangle $\mathrm{P\,E_0\,E}$ gives the following equations:

$$\frac{\sin \lambda}{\sin k} = \frac{\sin \Pi_1}{\sin \varepsilon_1} = \frac{\sin \Pi_0}{\sin \varepsilon}$$

During a period of several centuries the quantities k and λ are so small that no distinction is necessary between them and their sines. We may therefore put

$$\lambda = k \sin \Pi_1 \operatorname{cosec} \varepsilon_1 = k \sin \Pi_0 \operatorname{cosec} \varepsilon \qquad (b)$$

We also have, from the law of motion of the pole of the equator,

$$\left.\begin{aligned} \mathrm{D}_t \varepsilon_1 &= n \sin \lambda \\ \mathrm{D}_t \psi &= n \cos \lambda \operatorname{cosec} \varepsilon_1 \end{aligned}\right\} \qquad (c)$$