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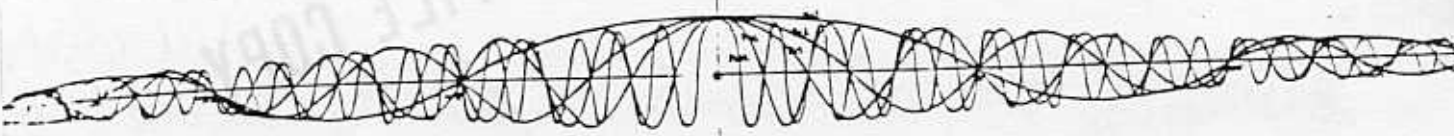


Illustration of Fourier's Wave-Theory of 1802. $\int_{-\infty}^{+\infty} \frac{f(x) \cos \frac{p}{2} x}{p} dp = f(x)$. T. J. J. See, Wave-Theory, 1921

Plate II. More complete Illustration of the Fourier Waves, from every direction, and traveling in every direction, $\frac{1}{\pi} \int_{-\infty}^{+\infty} \frac{\sin \frac{p}{2} x}{p} dp = f(x)$, under balanced symmetry of Stress about a Vibrating Corpuscle or Body. In this Wave-Theory of 1802, as Fourier shows, (Théorie Analytique de la Chaleur, section 415) the larger the multiple p , the shorter the waves, as shown in this plate. In Nature the longer waves, moving under Resistance, tend to break up into shorter waves; and hence the unlimited Gamut of Waves pervading the Universe, — this Cosmic Order having existed for millions of ages, as justly remarked by Sir Wm. Herschel, (Phil. Trans., 1785, pp 213-266; Mem., 1789, pp 214-226).