measure. Let $L$ be a positive number and let $z(t, L)$ be equal either to $z_1(t)$ or $z_2(t)$ according as $[t/L]$ is even or odd. It is clear that $z(t, L)$ is an S.a.p. solution of $\Phi[z(t), F(t)]=0$ for each positive $L$, and that all these solutions are essentially distinct. Of course many other solutions could be constructed in a similar way.

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# ON A LEMMA OF FEJÉR*

BY LINCOLN LA PAZ

1. *Simple Integrals.* In an important paper L. Fejér† has verified and used the following lemma.

LEMMA A. *If for a problem of minimizing an integral*

$$I_1 = \int_{x_1}^{x_2} \phi(y') \cdot f(x, y) dx, \tag{1}$$

*the Euler equation in normal form is*

$$y'' = F(x, y, y'), \tag{1'}$$

*then for a problem of minimizing the integral*

$$J_1 = \int_{x_1}^{x_2} [\phi(y')/f(x, y)] dx, \tag{2}$$

*the Euler equation in normal form is*

$$y'' = -F(x, y, y'). \tag{2'}$$

The following generalization of Fejér's lemma is proved in this note.‡

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* Presented to the Society, December 2, 1933.

† L. Fejér, *Das Ostwaldsche Prinzip in der Mechanik*, Mathematische Annalen, vol. 61 (1905), p. 432.

‡ In everything that follows, the range of the indices $i, j, k, \mu, \nu$ is from 1 to $n$ and $\mu$ and $\nu$ are umbral.