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In this note we prove that reconstruction from magnitudes of frame coefficients (the so called "phase retrieval problem") can be performed using Lipschitz continuous maps. Specifically we show that when the nonlinear analysis map  $\alpha : H \rightarrow R^m$  is injective, with  $(\alpha(x))_k = | \langle x, f_k \rangle |$ , where  $\{f_1, \dots, f_m\}$  is a frame for the Hilbert space  $H$ , then it is bi-Lipschitz on  $\hat{H}$  endowed with the natural metric  $D_2(x, y) = \min_{\varphi} \|x - e^{i\varphi}y\|_2$ . (Received November 14, 2014)