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*Quasi-intersections of isoenetgetic surface and complex angle variable.*

Isoenergetic surface of a periodic Schrödinger operator  $H = -\Delta + V_1$  changes its form when an additional periodic potential  $V_2$  is added,  $V_1 + V_2$  being periodic. This change is particularly essential near self-intersections of the isoenetgetic surface (they correspond to degenerated Bloch eigenvalues of  $H$ ). Generally speaking, intersections become quasi-intersections. In particular, quasi-intersections appear when the periods of  $V_2$  are multiples of the periods of  $V_1$ . We show how quasi-intesections can be studied by the means of complex analysis applied to an angle variable. The method is used to investigate Schrödinger operator with limit-periodic potential in two dimensions. (Received January 24, 2010)