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moreover, since for any point $(q_1, \cdots q_n) \in \mathbb{C}^n$ sufficiently near $\pi_I(H_0)$, there is a hyperplane $H \in U$ containing $q_1, q_2, \cdots q_n$, the image of U under π_I contains an open set in C^n.

"수정된 바꾸었는"

Remember that since H_0 meets with C in d distinct $p_1 \cdots p_d$, $\{p_1 \cdots p_d\}$ spans the hyperplane H_0.

$\Rightarrow$ For a point $(q_1, \cdots q_n) \in C^n$ sufficiently near $\pi_I(H_0)$, consider the space spanned by $q_1 \cdots q_n$. If the space is not a hyperplane, by adding some p_i's, we have a hyperplane containing $q_1, \cdots q_n$. Since the hyperplane H is very close to H_0, $H \in U$.

"Here we used the fact that if $p_1 \cdots p_e$ are linearly independent, then a set of points $(q_1, \cdots q_e)$ which are very close to $(p_1 \cdots p_e)$ is linearly independent."

Now let $D \subset C^n$ be the locus of points $(q_1, \cdots q_n)$ such that $q_1, q_2, \cdots q_n$ are linearly dependent. Since C is nondegenerate, D is a proper analytic subvariety of C^n, and so $\pi_I^{-1}(D)$ is likewise a proper subvariety of U.

$$C \times C \times \cdots \times C^n \xrightarrow{\phi} \mathbb{C}$$
$$(q_1, q_2, \cdots q_n) \longmapsto \det\begin{pmatrix} q_1 \\ \vdots \\ q_n \end{pmatrix}$$

$\Rightarrow$ $D = (\phi = 0)$ is a proper analytic subvariety since $\exists$ $(q_1, \cdots q_n)$ which is linearly independent.

$\Rightarrow$ $\pi_I^{-1}(D) = U \cap (\phi \circ \pi_I = 0)$. $\Rightarrow$ $\pi_I^{-1}(D)$ is a subvar-