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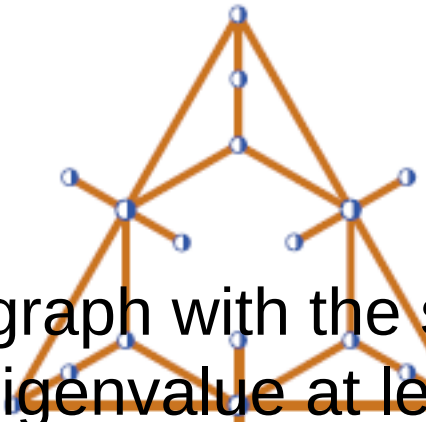

On a graph with the smallest eigenvalue at least $-\frac{1}{2}(3+\sqrt{5})$ --- an irreducibility of Hoffman graphs ---

Content :

Hoffman graph may be regarded as a graph obtained by
adding cliques to a simple graph,
and is formally defined to be a graph
which consists of the vertices of the simple graph
and the fat vertices expressing the cliques.
We may consider that
the simple graphs are Hoffman graphs without fat vertices.
In \cite{hlg},
R.~Woo and A.~Neumaier considered the ``sum" of Hoffman graphs,
but they did not formulate the concept of the ``sum"
since they treated it secondarily in order to consider another concept.
By a process to study \cite{T} and \cite{T2},
we discovered the concepts of the ``sum" and the ``irreducible decomposition"
of Hoffman graphs.

In this talk,
we deal with an irreducibility of Hoffman graphs,
and,
in particular,
Hoffman graphs with the smallest eigenvalue at least
$-\frac{1}{2}(3+\sqrt{5})$.

\begin{thebibliography}{3}
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at least $-1-\sqrt{2}$,
Linear Algebra Appl. {\bf 226--228}:577--591 (1995).
\bibitem{T} T.~Taniguchi, On graphs with the smallest eigenvalue at
least $-1-\sqrt{2}$, part I,
Ars.~Math.~Comtemp. {\bf 1}:81--98 (2008).

\bibitem{T2} T.~Taniguchi, On graphs with the smallest eigenvalue at
least $-1-\sqrt{2}$, part II,
in preparation.
\end{thebibliography}

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