

Supplementary files for anti-Pasch optimal coverings with triples

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This document explains the supplementary files that accompany the paper **Anti-Pasch optimal coverings with triples**.

The supplementary files are all simple text files (.txt) and are as follows.

APPTS(17).txt, APPTS(23).txt, APPTS(29).txt, APPTS(35).txt,
APPTS(41).txt, APPTS(47).txt, APPTS(65).txt,

APSTS(19)withG4m.txt, APSTS(31)withG4m.txt, APSTS(37)withG4m.txt,
APSTS(49)withG4m.txt, APSTS(61)withG4m.txt, APSTS(85)withG4m.txt,

BAPSTS(37,-3).

Files of type APPTS(v).txt ($v \neq 17$) contain an anti-Pasch partial triple system of order v on the point set $V = \{0, 1, 2, \dots, v-3, A, B\}$ with a hole $\{0, 1, 2, A, B\}$. The points A and B are represented as $v-2$ and $v-1$ respectively. Addition of any of the 10 triples from the hole does not create a Pasch configuration. By adding the triples $A12$ and $B02$ the APPTS(v) is converted to an APMMPST(v) that is generically labelled with respect to the pair $\{A, B\}$ and has no blocks of the form $\{2, x, x+4\}$ with arithmetic modulo $v-2$. In each case we also give the cycle(s) on the pair $\{A, B\}$. By adding the further triples $AB1$ and $A01$ to the APMMPST(v), the design is converted to an APMMCT(v) with thrice repeated pair $A1$.

The file APPTS(17).txt contains an anti-Pasch partial triple system of order 17 on the point set $V = \{0, 1, 2, \dots, 16\}$ with a hole $\{0, 1, 2, 3, 4\}$, containing blocks $\{0, 2i-1, 2i\}$ for $i = 3, 4, \dots, 8$, and having the additional property that adding the five triples 012, 013, 014, 023 and 234 does not generate a Pasch configuration. By adding the triples 012 and 234 to this APPTS(17) an APMMPST(17) is formed. By adding the further triples 013 and 014 an APMMCT(17) is formed with thrice repeated pair 01.

Files of type APSTS(v)withG4m.txt contain an APSTS(v) on the point set $V = \{0, 1, 2, \dots, v-3, A, B\}$, having a block $AB0$. The points A and B are represented as $v-2$ and $v-1$ respectively. The system is generically labelled

with respect to the pair $\{A, B\}$ and has no blocks of the form $\{0, x, x + 4\}$ with arithmetic modulo $v - 2$. At the bottom of each file is the (single) cycle on $\{A, B\}$ and the differences $|x - y|$ modulo $v - 2$ of all the pairs xy in blocks $0xy$.

The file BAPSTS(37, -3).txt contains a 3-bipartite system on the point set $V = \{1, 2, \dots, 37\}$ with hole $\{1, 2, 3\}$ and bipartition $\{X, Y\}$ with $X = \{4, 5, \dots, 20\}$ and $Y = \{21, 22, \dots, 37\}$.