From: **Harmony Zhan** fomalhauty@gmail.com
Subject: Fwd: Rank 2 Examples on 16 Vertices
Date: November 19, 2020 at 11:09 AM
To: Arnbjorg Soffia Arnadottir arnbjorgs@gmail.com, Ada Chan ssachan@yorku.ca, Chris Godsil cgodsil@uwaterloo.ca

HZ

---------- Forwarded message ---------
From: Harmony Zhan <fomalhauty@gmail.com>
Date: Wed, Nov 18, 2020 at 3:32 PM
Subject: Fwd: Rank 2 Examples on 16 Vertices
To: Ada Chan <ssachan@yorku.ca>

---------- Forwarded message ---------
From: Ferdinand Ihringer <ferdinand.ihringer@gmail.com>
Date: Wed, Jul 26, 2017 at 9:05 AM
Subject: Re: Rank 2 Examples on 16 Vertices
To: Krystal Guo <guo.krystal@gmail.com>
Cc: Christopher Godsil <cgodsil@uwaterloo.ca>, Harmony Zhan <fomalhauty@gmail.com>

Hi all,

I double checked all my examples for 32 and 64 vertices and made a complete list that is attached, so that you have the data conveniently available.

I updated my notes from last September to make the formulas for the eigenvalues slightly nicer and I updated and cleaned up my notes on the known examples. In particular I added what Chris Godsil and I discussed during the Malta conference.

All the best,

Ferdinand

On Sunday, June 11, 2017 02:30:28 PM Krystal Guo wrote:

> Hi Ferdinand,
>
> This is excellent news! For the examples of 64 and 32 vertices, what are the automorphism groups? (Are the two cospectral classes also orbits?)
>
> Thanks,
>
> Krystal
>
> On Sat, Jun 10, 2017 at 7:02 PM, Ferdinand Ihringer
>
> <ferdinand.ihringer@gmail.com> wrote:
>
> > Dear all,
> >
> > For your information ... I found one example with an average mixing marix of rank 2 for 64 vertices with degrees 13 and 14. So I have the right group. Here is the canonical graph6 string:
> >
> > ~?@?BWWGHGS`bIAI`QWKoBI?E?K@_gCGpOcCoHC?o@_@[??AGK_@oN_M?VOocGCJ?`?_Ce_I?H
> > k?SC?CwkA?GxOKc?@?A@?g_?_?RC?___q?ACH?C_CC@@GOAcBC@?AQCS?O?ROSOA?E@?BOC?BH
> > ?a?GPEI?o?GBwS_B?GAhOGA_@@KgG`?AB@GXa?@aCD`??oGA?_?ZOoC??OX?@C?GQCEW???Sc_
> > KCA?aG?@XACc@@O?IKGT?H??`_B?@?A`??QCcAcAAO?E?QEA??C@BT?X@p?@??
> > [HG@tO?@s??G_}Ka??WO?NAKGb??_CI?CasO_?_K?Q?GtS??Q@__@UWB
> >
> > (Remove the line break if you want to play with it in Sage.)
> >
> > The "construction" is as before. First you take a Cayley graph generated

> The "construction" is as before. First you take a Cayley graph generated by
> involutions on C2^5:C2 and then you add an edge in C2^5.
>
> All the best,
>
> Ferdinand

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Hanmeng (Harmony) Zhan

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Hanmeng (Harmony) Zhan


examples_with_64_ver..._short


examples_with_32_vertices

notes_rank2_average...25.pdf

notes_larger_rank2_m...26.pdf