

## Ghost Particles

A 32 bar Jig for three couples in a three-couple longwise set. (6x32J)

Recommended tune: Nonlinear Plasmonics

Right-handed version (anti-neutrinos):

- 1-4 First couple cross giving right hands and cast off one place, second couple step up.
- 5-8 First couple dance a half figure of eight around standing second couple
- 9-16 First couple lead down the middle and back to face ladies first corner, lady in front of man
- 17-20 Half reel of three on the men's side, first couple in tandem and second man pass right shoulder to commence. The first lady dances across the top of the set to original place, whilst the second lady sets and dances diagonally down across the set.
- 21-24 Half reel of three on the men's side, second lady in front of first man dancing in tandem, passing second man left shoulder to commence. The second lady dances across the bottom of the set into third ladies place, whilst the third lady sets and dances diagonally up across the set.
- 25-28 Half reel of three on the men's side, third lady in front of first man dancing in tandem, passing second man right shoulder to commence. The third lady dances across the top of the set into first ladies place, whilst the first lady steps down into second place and sets.
- 29-32 First couple turns once round with the left hand, to finish in second place.

Left-handed version (neutrinos):

- 1-4 First couple cross giving left hands and cast off one place, second couple step up.
- 5-8 First couple dance a half figure of eight around standing second couple.
- 9-16 First couple lead down the middle and back to face man's second corner, man in front of lady.
- 17-20 Half reel of three on the ladies' side, first couple in tandem and second lady pass left shoulder to commence. The first man dances across the top of the set to original place, whilst the second man sets and dances diagonally down across the set.
- 21-24 Half reel of three on the ladies' side, second man in front of first lady dancing in tandem, passing second lady right shoulder to commence. The second man dances across the bottom of the set into third man's place, whilst the third man sets and dances diagonally up across the set.
- 25-28 Half reel of three on the ladies' side, third man in front of first lady dancing in tandem, passing second lady left shoulder to commence. The third man dances across the top of the set into first man's place, whilst the first man steps down into second place and sets.
- 29-32 First couple turns once round with the right hand, to finish in second place.

The versions should be danced alternating Right and Left. After the first time through the order is 3, 1, 2 and the new top couple commences. After six times through, all three couples have danced both Right and Left versions.

Note: in this dance, the ghost particles (ladies or men) change state without interacting. There are three types of neutrinos (electron, muon, tau), which oscillate between their mass states (1, 2, 3) whilst travelling. Often termed ghost particles as they rarely interact, in this dance the ghost lady or man changes between 1, 2 and 3 in the reels. The Right-handed version represents anti-neutrinos and the Left-handed version represents neutrinos.

This physics inspired dance (devised by a physicist) was first tested at the 2024 St Andrews Summer School where it was danced by a set of six physicists with live music played by another physicist including a physics-related tune composed by yet another physicist.

Devised by Alison Mitchell (2019, modified 2024)