

# Creativity in Contemporary Music: From the Soloist's Perspective



Photo courtesy of Howarth of London

[www.21stcenturyoboe.com](http://www.21stcenturyoboe.com)

Christopher Redgate (c) 2011



Arts & Humanities  
Research Council

# Research Background

- An ongoing project which started about 35 years ago...
- The broad overarching aim is to explore boundaries of the oboe:
  - its sonic resources - range, multiphonics, microtones
  - technical potential - circular breathing while articulating
  - even the instrument itself - a redesigned oboe
- There are several myths or concepts surrounding the oboe which I try to debunk!

# Work with Composers

Central to this work both now and throughout my performing career has been my work with composers.

A symbiotic relationship - 're-imagining' the oboe.

Very long relationships with several composers.

Almost always an atmosphere of exploration and development - challenging and being challenged.

Has frequently gone beyond simply writing a specific work and into more theoretical or related areas of research - e.g. a new notation system for multiphonics.

Five composers have been commissioned to write for the new instrument:

Brian Ferneyhough - Quartet for oboe and string trio. (15-20 minutes)

Michael Finnissy - Work for oboe (doubling Lupophon) and piano. (50 minutes)

Edwin Roxburgh - Work for oboe and piano. (20 - 25 minutes)

Richard Barrett - Work for oboe, live electronics and small ensemble ( 15-20 minutes) and a second version for solo oboe and live electronics.

Sam Hayden - Work for oboe and small ensemble (15 minutes) and a second version for solo oboe.

# Redesigning the Oboe

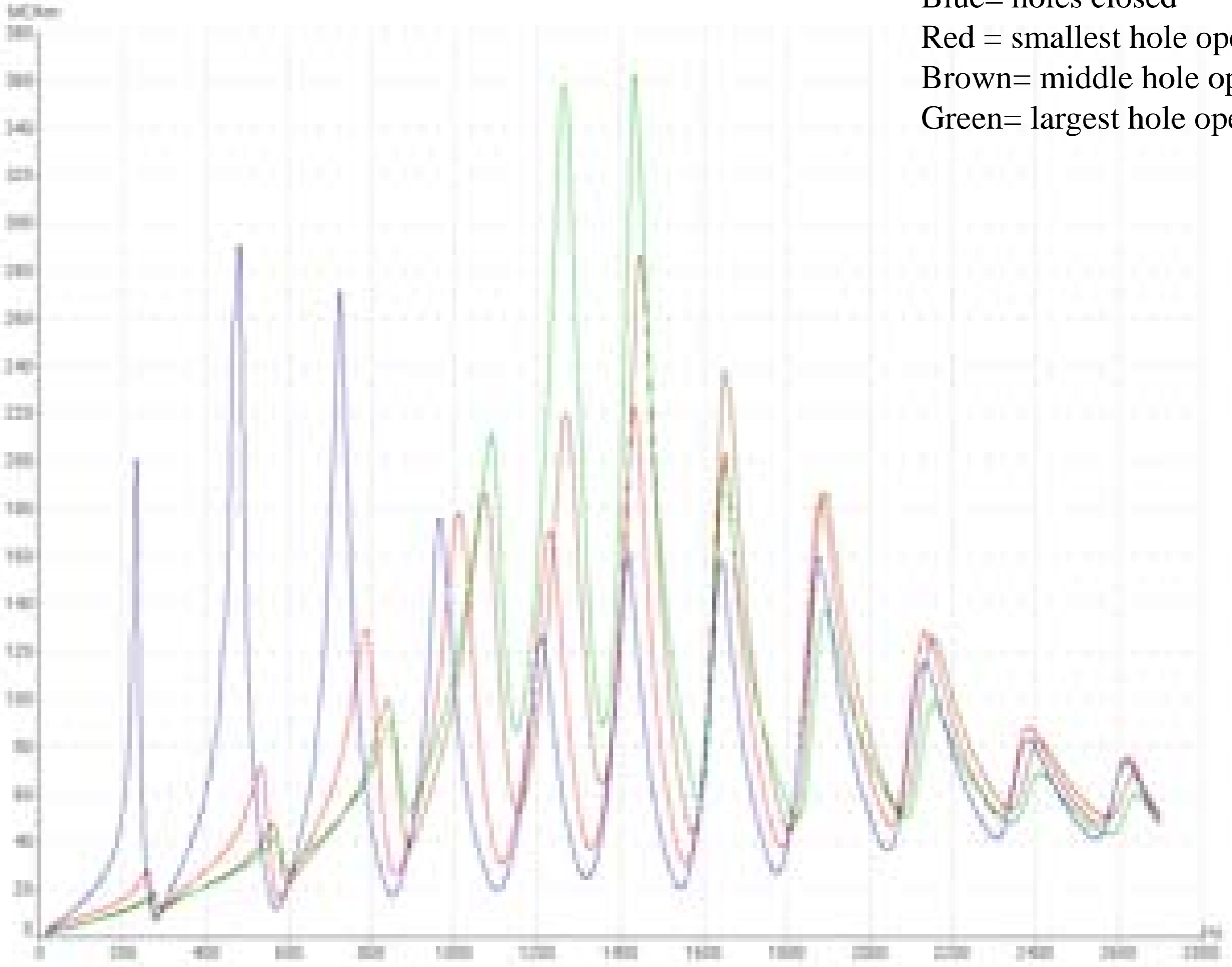
- The re-design of the instrument is closely linked to the other areas of my research.
- Redesign Aims:
  - to respond to the most challenging music written today in order to make some areas of performance more practical
  - to expand the potential of the instrument further

# Exploring the Extended Range



# Bb3 fingering

Blue= holes closed  
Red = smallest hole open  
Brown= middle hole open  
Green= largest hole open





	F6	F#6	G6	G#6	A6	Bb6	B6	C7	
onation	very poor	very poor	no	no	no	no			<b>Hole 1</b>
									Hole size - 0.6
									Hole size - 0.75
									Hole size - 1.0
									Hole size - 1.3
									Hole size - 1.5
				about a	semitone	out			Hole size - 1.7
				about a	semitone	out			Hole size - 2.0
				about a	semitone	out			Hole size - 2.3
	F6	F#6	G6	G#6	A6	Bb6	B6	C7	<b>Hole 2</b>
									Hole size - 0.6
									Hole size - 0.75
									Hole size - 1.0
	Bb6								Hole size - 1.3
			poor	pitch	but	easy	response		Hole size - 1.5
	Bb6		sharp	sharp	sharp				Hole size - 1.7
	Bb6		sharp	sharp	sharp				Hole size - 2.0
o	Bb6		G# sharp	A6 flat	low Bb6			Bb6	Hole size - 2.3
	F6	F#6	G6	G#6	A6	Bb6	B6	C7	<b>Hole 3</b>
								drops	Hole size - 0.6
								drops	Hole size - 0.75
								drops	Hole size - 1.0
								drops	Hole size - 1.3
								drops	Hole size - 1.5
								drops	Hole size - 1.7
									Hole size - 2.0
									Hole size - 2.3
	F6	F#6	G6	G#6	A6	Bb6	B6	C7	<b>Hole 4</b>
									Hole size - 0.6
									Hole size - 0.75
									Hole size - 1.0
									Hole size - 1.3
									Hole size - 1.5
									Hole size - 1.7
									Hole size - 2.0
									Hole size - 2.3
	F6	F#6	G6	G#6	A6	Bb6	B6	C7	<b>Hole 5</b>
									Hole size - 0.6
			This	is	exceptionally	good	!	!	Hole size - 0.75
									Hole size - 1.0
									Hole size - 1.3
									Hole size - 1.5
									Hole size - 1.7
									Hole size - 2.0



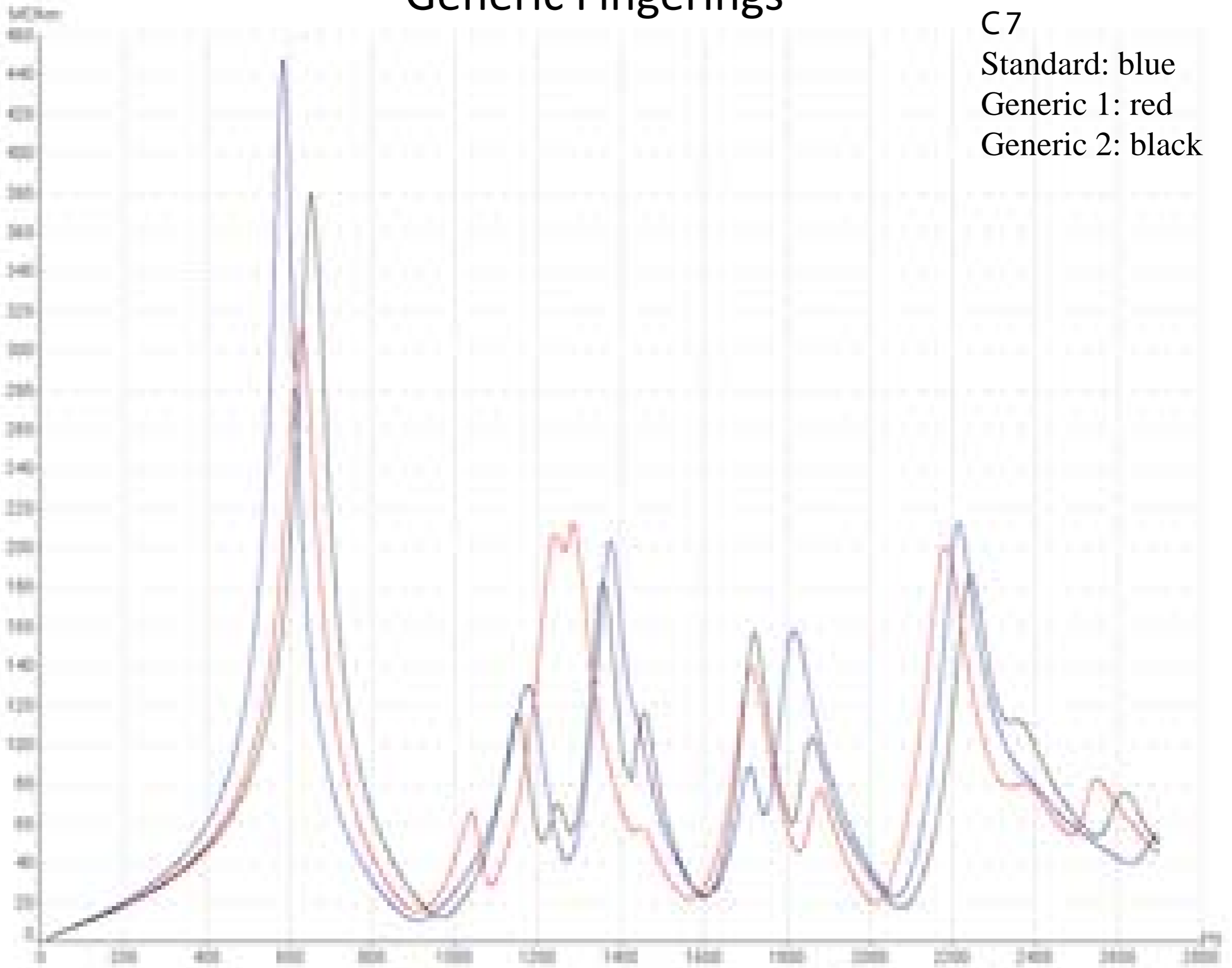
# Generic Fingerings

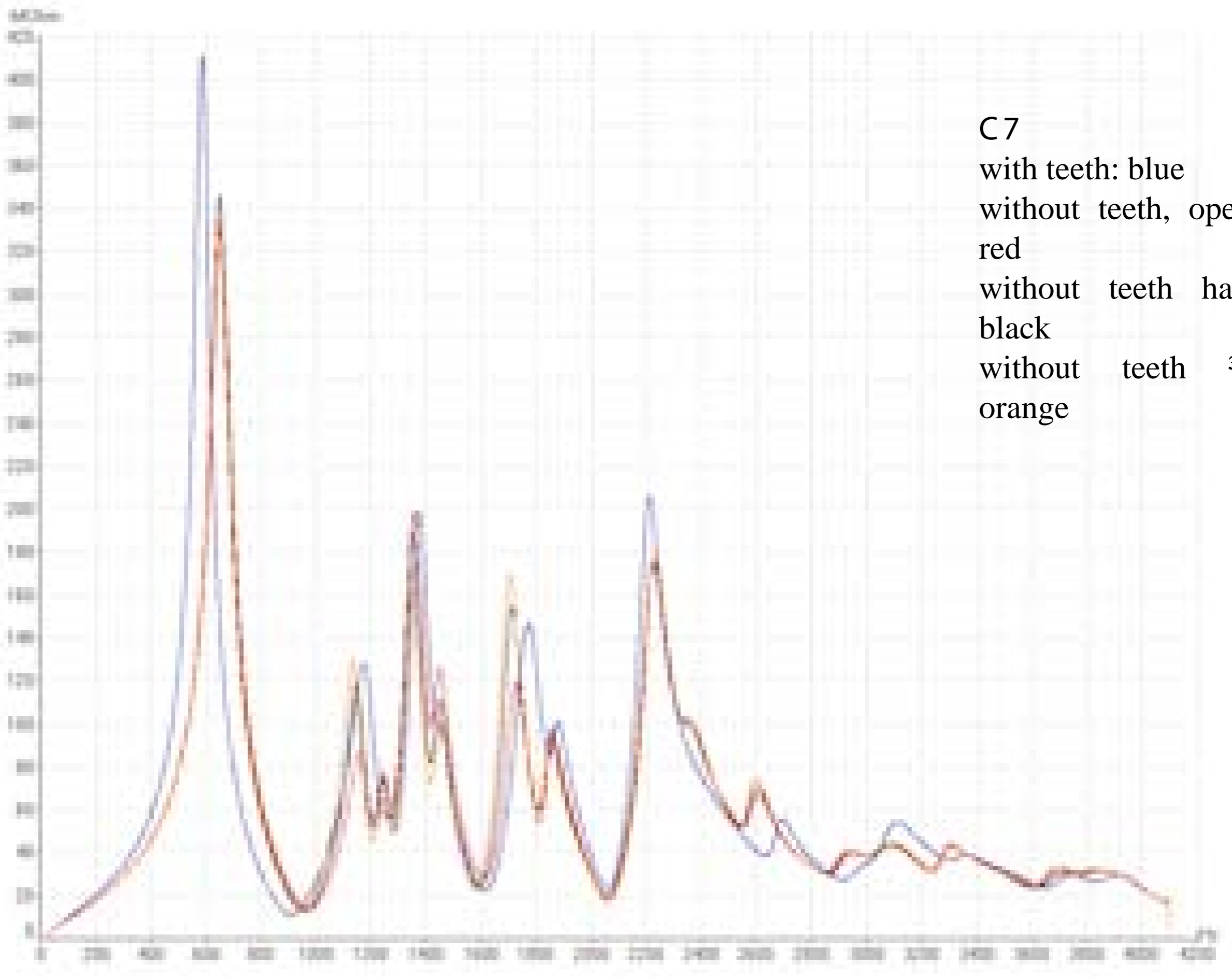
C7

Standard: blue

Generic 1: red

Generic 2: black



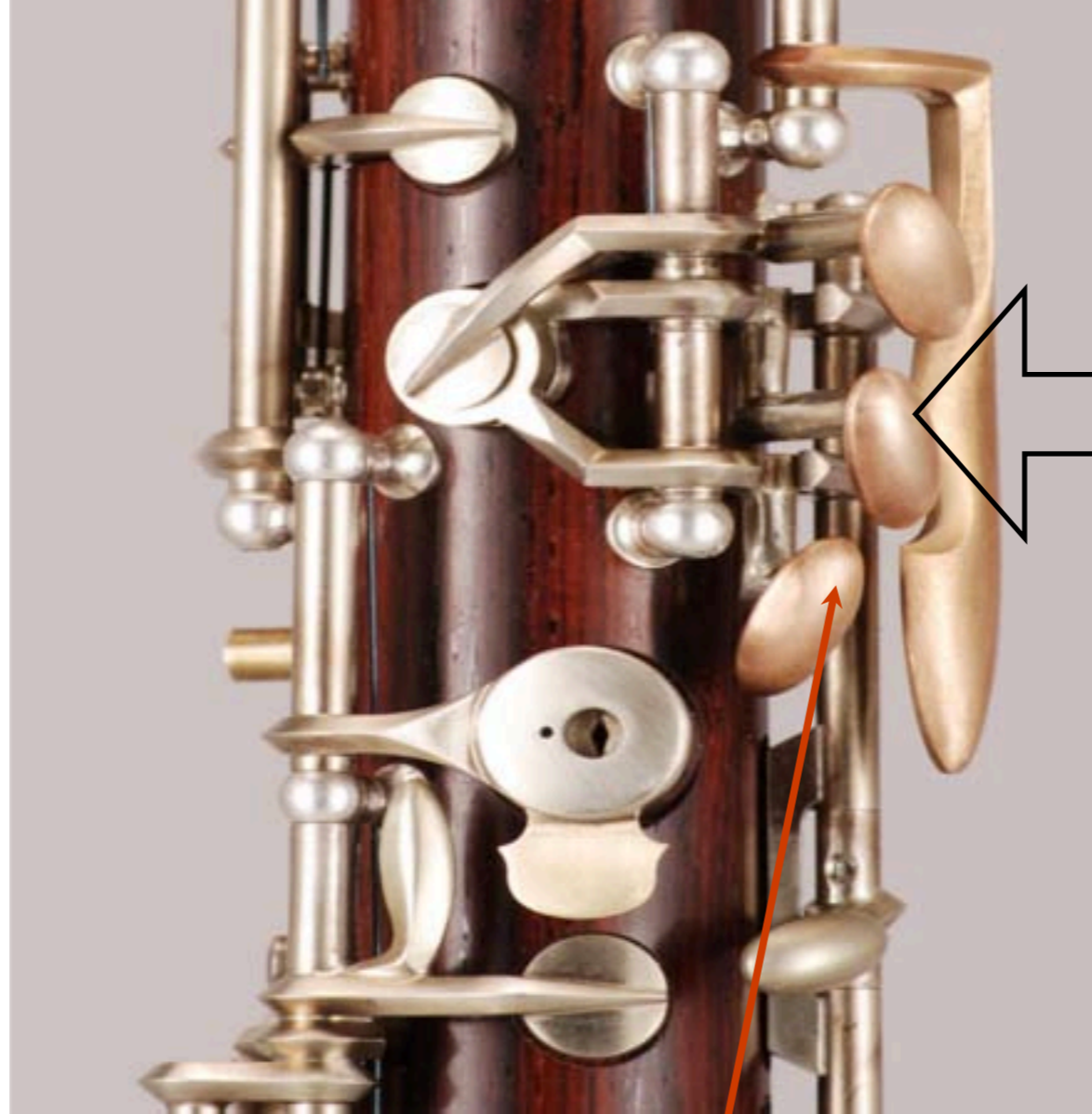


C7  
with teeth: blue  
without teeth, open:  
red  
without teeth half:  
black  
without teeth 3/4:  
orange

		Modifications					Columns F, G, H refer to			Columns I to T refer to alteration		
		columns C, D, E refer to the octave										
Generic references	The Fingering	1	2	3	•	θ	0	Bb	B	C		
<b>G6 - 'Top G'</b>												
G1 40/41	1/3 θ •O •00		X		X	S	up20					
G1 42/43/56	1/3•O• •00 (56C#)		10 up	10 up		30 up	40 up					
G1 46- 50	1/3 •00 (G#)•00C		20 up			40 up	G# up 50			10 down		
G1 60 - 66	1/3 •00(G#) •00	yes	up 20	yes		up 30	up 70					
G1 78	1 • θ0B •00Eb	yes	up 20	yes		up 50	up 70					
G2 44/45	3 •00G# ••F0		up20			up40	up80					
G2 52	1 θ•0 •0F0		up 20		with oct 3		up 20					
G2 58/59	3 •00 (or•) G# •0F0C#		up 20			up40	up 80					
G2 64	1•θ0 ••F0		up 10			up 50	up 70					
G2 68/69	1 •0θ ••F0		up 10									
G3 74	1•θ•Bb •••C					down	down			up 10		
G3 75	1 •θ•B •••		up 10			up 40	up 50					
G3 76	1 •θ•Bb •••		no			up 30	up50					
G3 77	1 •θ•Bb •••C#		no			up30	up 40	up 100				
<b>G#</b>												
G 1 81/82/83/ 100/103/95/96	1/3 •0•B 0••		no			up 50	up60		not needed			
G1 85/86 105/116/125	1/3 •0• 0••Eb		+20			+30	+50					
G1 99	1 θ0•Bb 0••C#		+20		-30		+20		+30			
G1 124	2θ0• ••C	-20		-20	-40		+10			not need		
G1 97	1•0•Bb 0•0		+30			+30	+50	-80				
G1 93	1•0• 00•C		X			+40	+70					
G2 79/80/84/91 /92/101/51/108a	1•00 •00		-20 poor			+30	+70					
G2 53	2θ00G# •00Eb	-40		-30	no		no					
Fingering No		1	2	3	•	θ	0	Bb	B	C		
<b>A</b>												
G1 117, 118, 119, 141, 156, 164	123 00•00• (G# C Eb) stiff and flat		+10		-60	-30						

# Designing Key-work





The hamburger key and the trill key touches



Re-designed side key facility

Text



# Microtonal Development

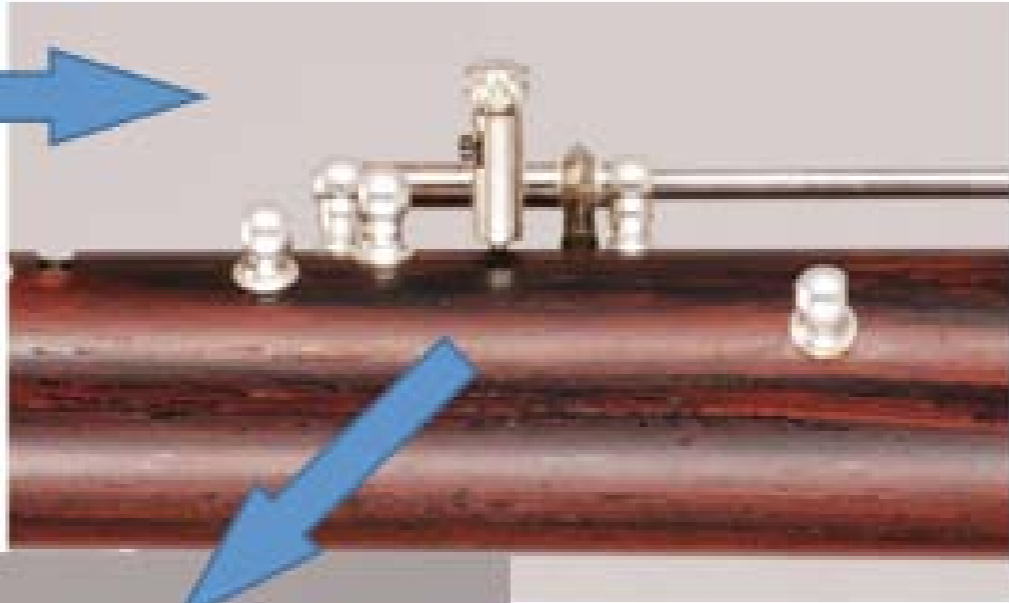
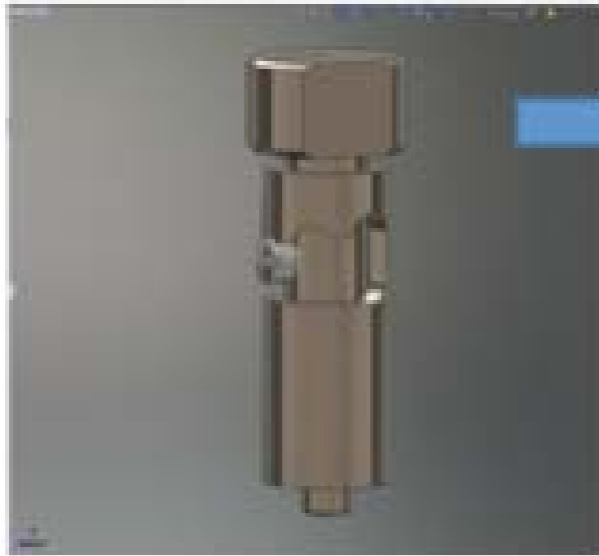
- I have been working to develop a number of different microtonal options: 1/4th , 1/8th, 1/3rd and 1/6th as well as microtonal inflections.
- I decided upon a compromise in key development and a mixture of approaches.
- As well as the use of the trills keys and de-linked keys,
- Open holes - tuned as near as possible to 1/4 tones - on E, G and A keys.
- A split key on F sharp rather like that of the cor anglais LH1 but with the half hole tuned as near as possible to G 1/4 flat. This will enable glissandi and yet keep the double trills as available at present.
- A RH side key that will enable the small c tone hole to be played properly.
- 
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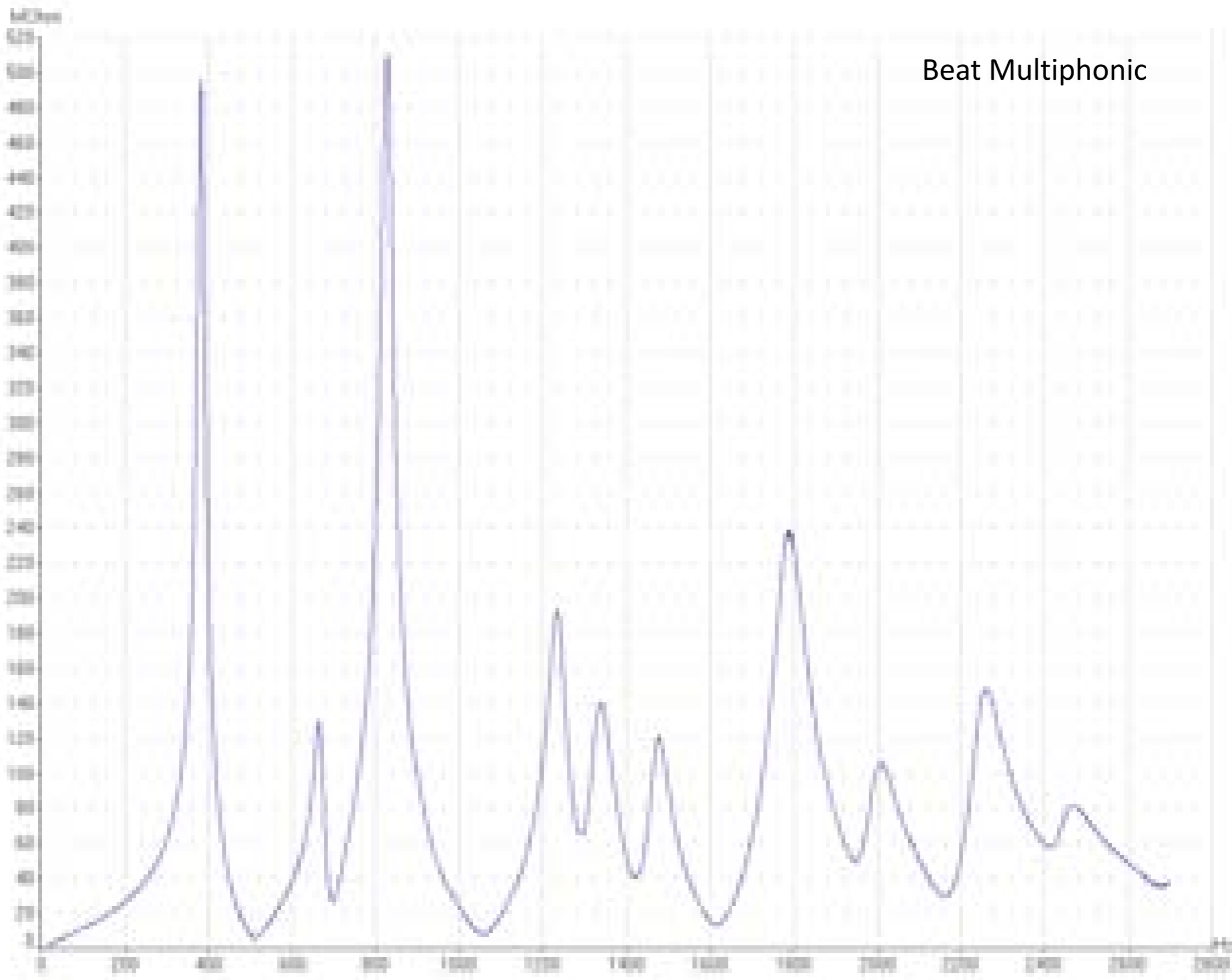




# Multiphonic Development

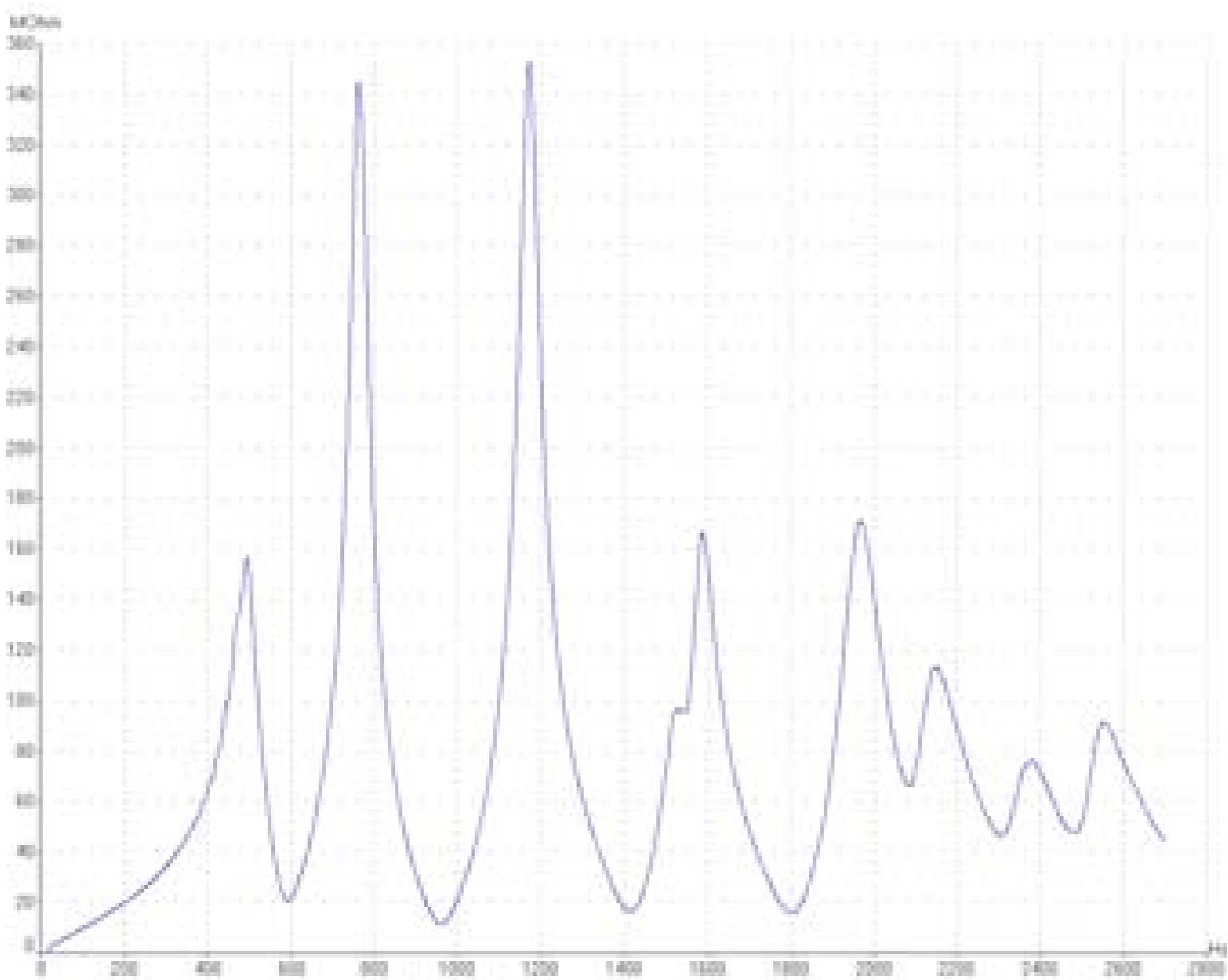
- The oboe has a staggering range of multiphonics available.
- I have catalogued almost 900 from the printed/available sources.
- There is a significant increase in the number of multiphonics available on the new instrument - the estimate is around 2500.
- I am currently testing every fingering on both the standard oboe and the new instrument.





Beat Multiphonic

Dyad



1

Image Measurement  
Unweighted JPL\_Origins\_Measurements\_120804\_200\_04\_01\_120804\_04\_04.tif

# Multiphonic Notation

The image displays two staves of musical notation, each featuring six groups of notes. Each group is enclosed in a rectangular box and has a bracket above it with the number '6', indicating a multiphonic passage. The notes within these boxes are densely packed, representing multiple pitches sounding simultaneously. The first staff shows a sequence of six such multiphonic groups, each containing six notes. The second staff also shows six multiphonic groups, each with six notes. A thick horizontal line is drawn below the second staff, extending from the first group to the last, possibly indicating a sustained or continuous texture. The notation is in a standard staff with a treble clef and a key signature of one sharp (F#).

Paul Archbold: Fluxions

# Testing the new Instrument

- Learning the new instrument
  - As a result of this work the instrument has undergone some minor redesign and may yet undergo more
- Collaborative work with composers
- Improvisational strategies used to explore the instrument's potential

# Electronic Development Moves Towards a Hyper-oboe

- A 21st century oboe has to have some electronic potential!
  - The instrument will be wifi.
- A small box on the bell will include movement sensing technology along the lines of that used in the iPhone 4.
- This technology will enable the performer to control software (such as MaxMSP) on a laptop by using pre-programmed movements and the switches.
- Two pressure sensitive ‘buttons’ will be added to the back of the top joint for extra control.
  - A DPA microphone will be placed on the back of the bottom joint.

# Related Issues

- Changing the instrument - changing the music
- The relationship of a virtuoso performer to their instrument.
- Improvisation as a research tool.
- Re-educating performers and composers.



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