

Chinese (Mandarin) consonants, IPA

	Bilabial		Labio-dental		Denti-alveolar		Retroflex		Alveolo-palatal		Velar		Uvular	
Plosive	p				t						k			
Aspirated plosive	p ^h				t ^h						k ^h			
Affricate					ʈʂ		ʈʂ		ʈʂ					
Aspirated affricate					ʈʂ ^h		ʈʂ ^h		ʈʂ ^h					
Fricative	ɸ		f		s		ʂ	ʐ	ʃ		x			
Nasal		m				n					ŋ		[ɴ]	
Approximant		ɥ	w					[ɻ]						
Lateral approximant						l								

- Where symbols appear in pairs, the one to the right represents a voiced consonant.
- Where symbols appear singly, they are placed to the left within their column if they represent a voiceless consonant, and to the right if they represent voiced.
- Symbols enclosed in brackets represent non-phonemic consonants.
- Blacked-out cells indicate phones judged to be impossible.

- [w] represents a labial **velar** approximant; [ɥ] represents a labial **palatal** approximant.
- Phones in the denti-alveolar column are laminar alveolars, pronounced with the tongue tip behind the lower front teeth (similar to the alveolo-palatals).
- The retroflex fricative [ʐ] and approximant [ɻ] are both realizations of the “R” phoneme. The choice of [ʐ] to represent the phoneme is arbitrary.
- The velar nasal [ŋ] is sometimes pronounced farther back, as a uvular nasal: [ɴ].



Chinese (Mandarin) consonants, Pinyin

	Bilabial		Labio-dental		Denti-alveolar		Retroflex		Alveolo-palatal		Velar		Uvular	
Plosive	b				d						g			
Aspirated plosive	p				t						k			
Affricate					z		zh		j					
Aspirated affricate					c		ch		q					
Fricative	(f)		f		s		sh	r	x		h			
Nasal		m				n					ng		(ng)	
Approximant		yu	w/u					(r)						
Lateral approximant						l								

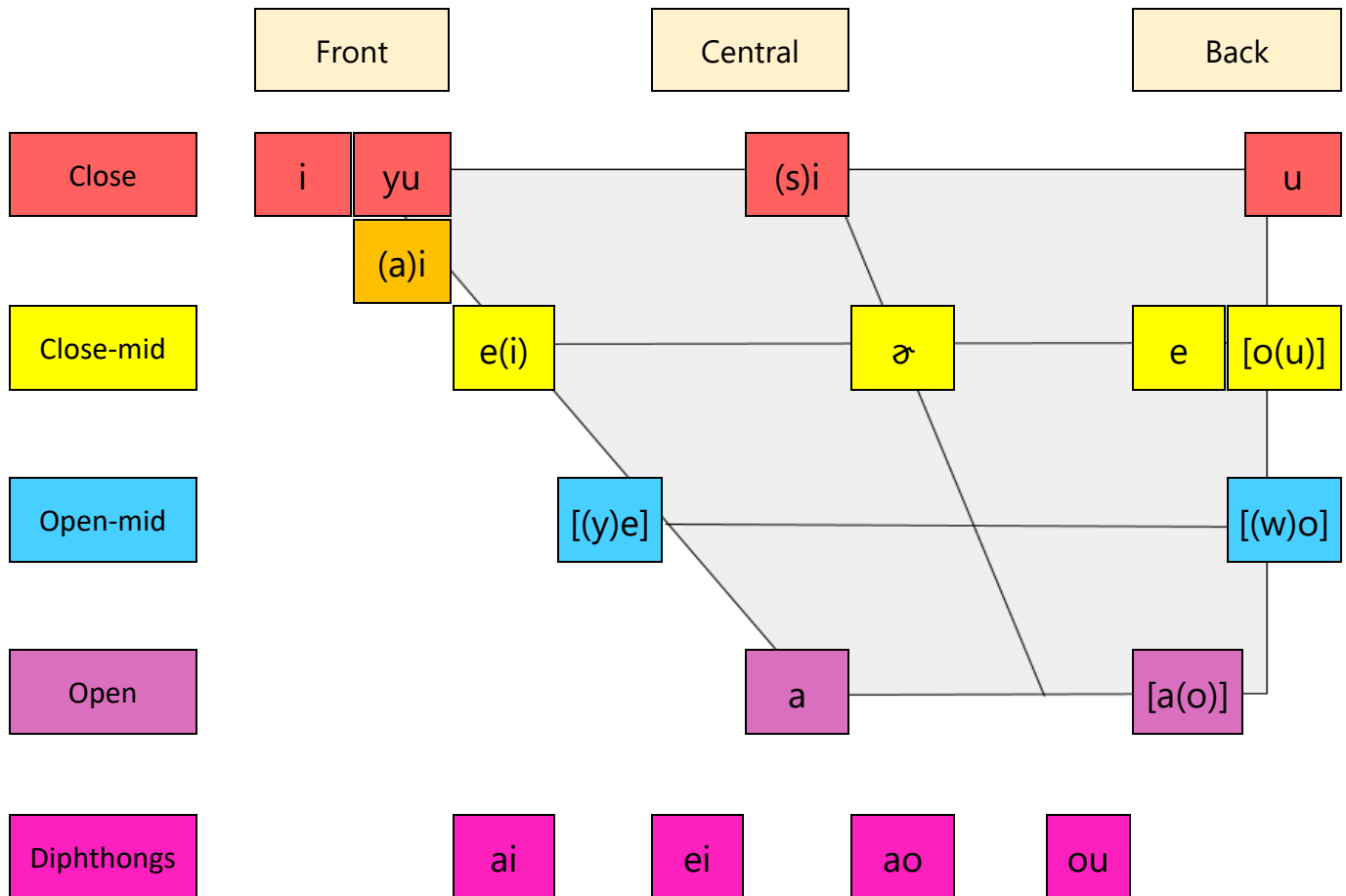
- Symbols enclosed in parentheses represent non-phonemic consonants.

Chinese (Mandarin) consonants, Zhuyin

	Bilabial		Labio-dental		Denti-alveolar		Retroflex		Alveolo-palatal		Velar		Uvular	
Plosive	ㄅ				ㄆ						ㄎ			
Aspirated plosive	ㄆ				ㄆ						ㄎ			
Affricate					ㄆ		ㄆ		ㄆ					
Aspirated affricate					ㄆ		ㄆ		ㄆ					
Fricative	(f)		ㄆ		ㄆ		ㄆ	ㄆ	ㄆ		ㄆ			
Nasal		ㄆ				ㄆ					ㄆ		(ㄆ)	
Approximant		ㄆ	ㄆ				(ㄆ)		—					
Lateral approximant						ㄆ								

- Symbols enclosed in parentheses represent non-phonemic consonants.

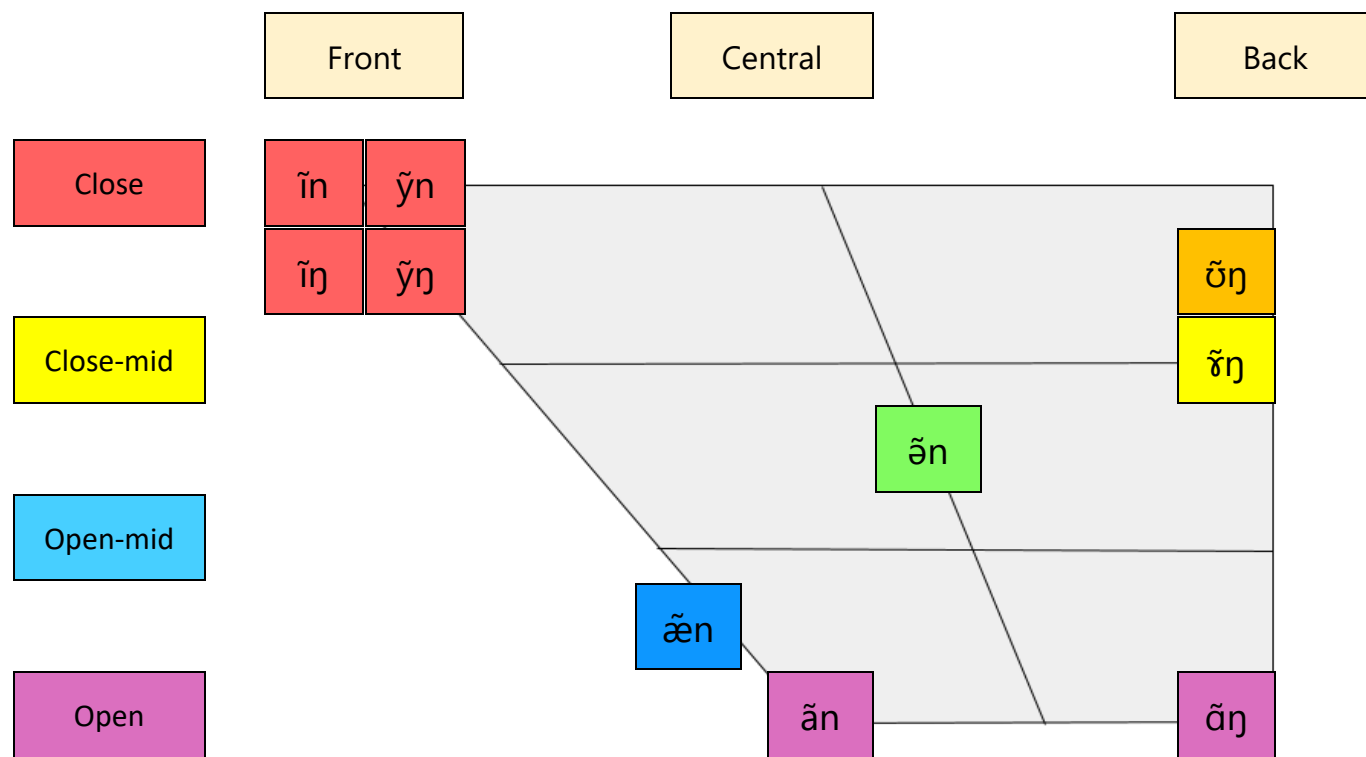
Chinese (Mandarin) oral vowels, IPA



- Symbols in parentheses next to a non-phonemic vowel represent a conditioning environment, not necessarily the only one.
- Nasal allophones are shown on a separate vowel chart.



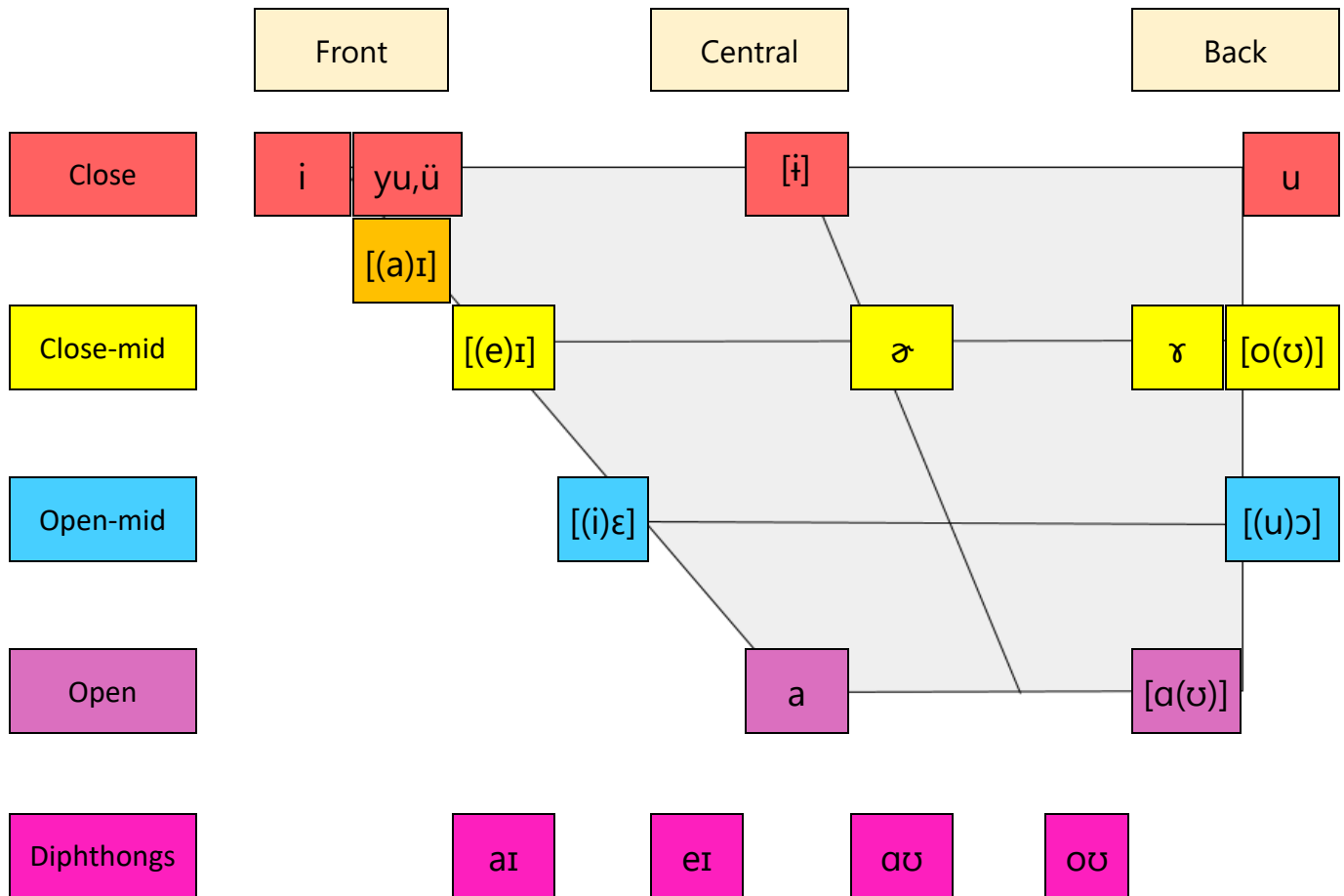
Chinese (Mandarin) nasal vowels, IPA



- All symbols enclosed in this chart represent nasal allophones of vowel phonemes.
- The accompanying [n] or [ŋ] represents the conditioning environment.
- Nasal allophones of /u/: [ǔŋ].
- Nasal allophones of /ʏ/: [ỹŋ, ǎŋ (u)ɔ].
- Nasal allophones of /a/: [ǎŋ, ǎ(ŋ), ǎŋ].



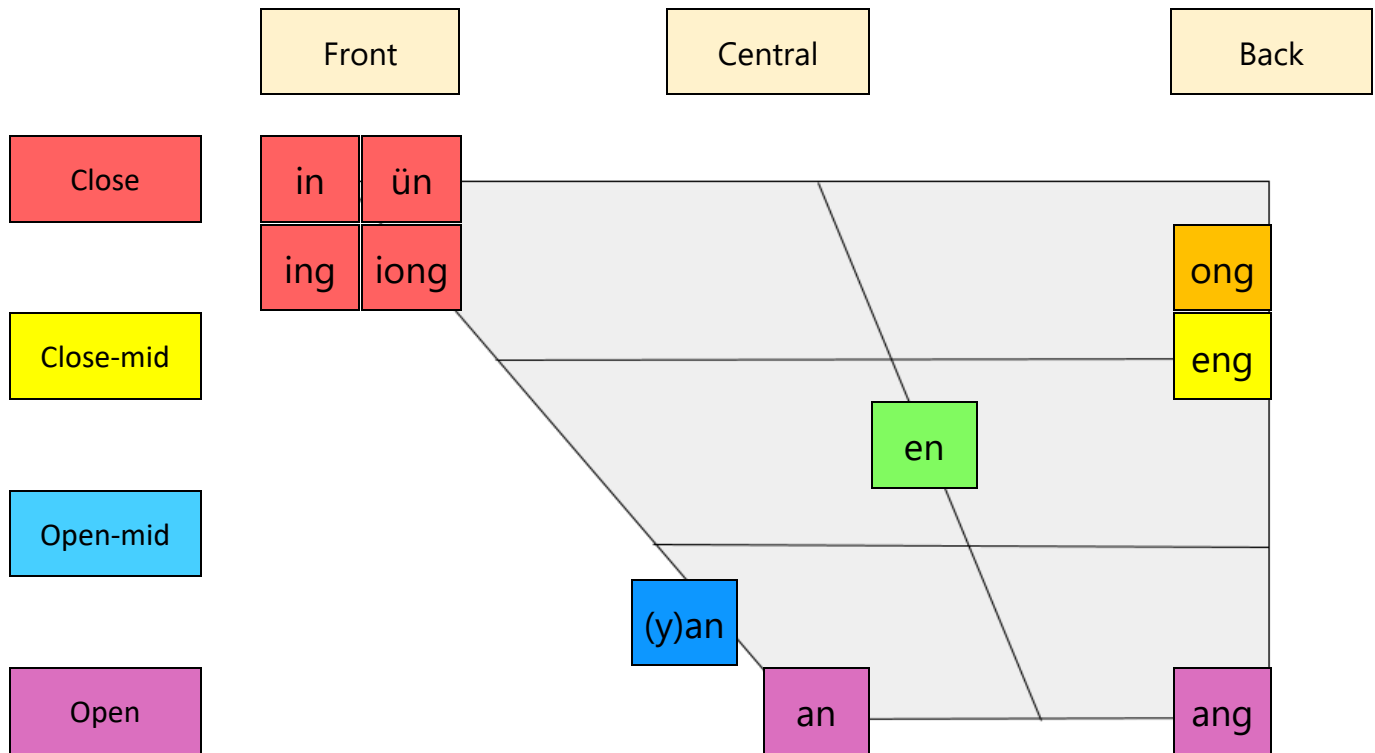
Chinese (Mandarin) oral vowels, Pinyin



- Where symbols appear in pairs of cells, the cell to the right represents a rounded vowel.
- Where symbols appear singly, the front vowels and [ɑ] are unrounded; the close and close-mid back vowels are open.
- Symbols enclosed in brackets represent non-phonemic vowels.
- Symbols in parentheses next to a non-phonemic vowel represent the conditioning environment.
- Allophones of /ɤ/: [ɤ, (i)ɛ, (u)ɔ].
- Allophones of /a/: [a, ɑ].
- Nasal allophones are shown on a separate vowel chart.



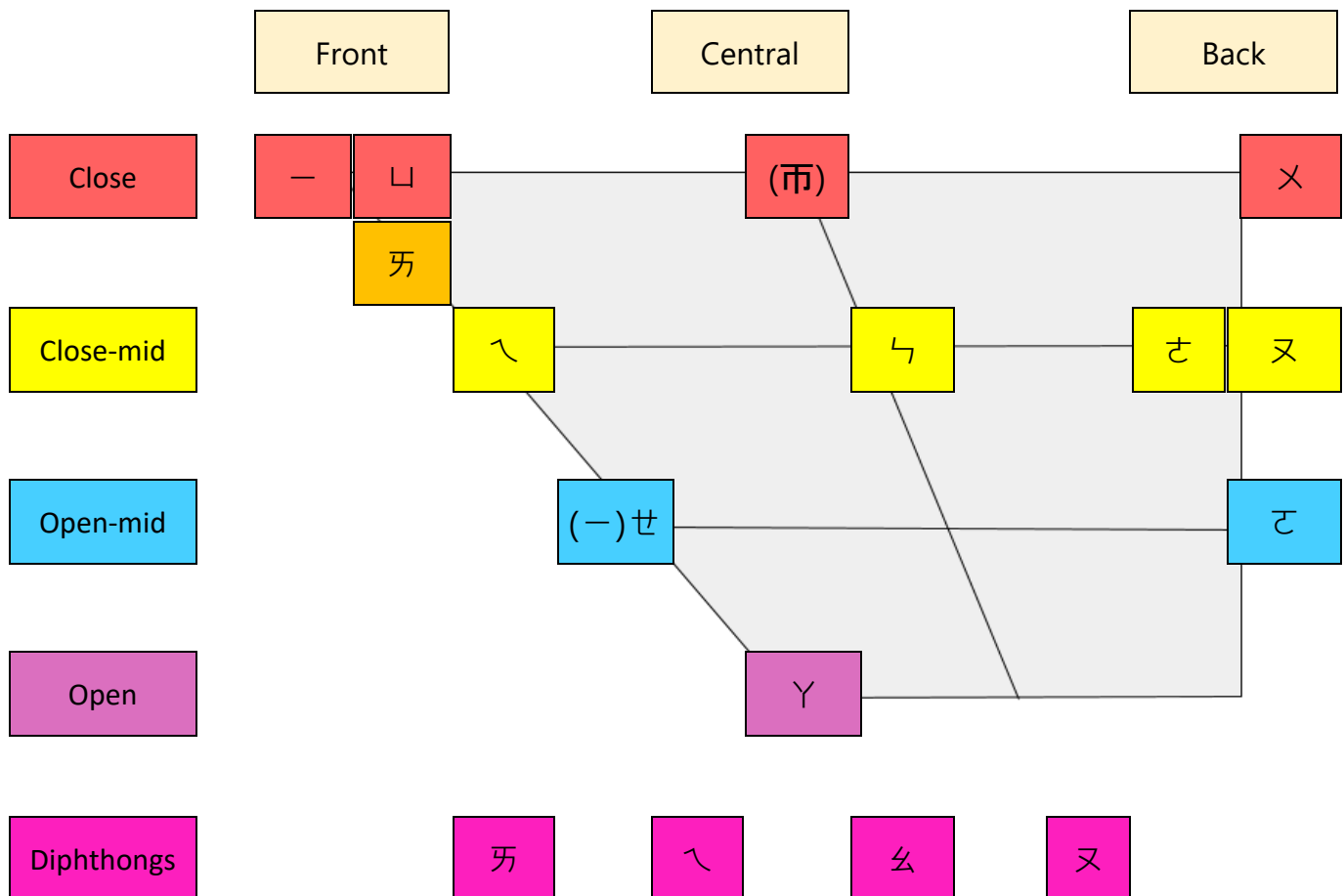
Chinese (Mandarin) nasal vowels, Pinyin



- All symbols enclosed in this chart represent nasal allophones of vowel phonemes.
- The accompanying <n> or <ŋ> represents the conditioning environment.

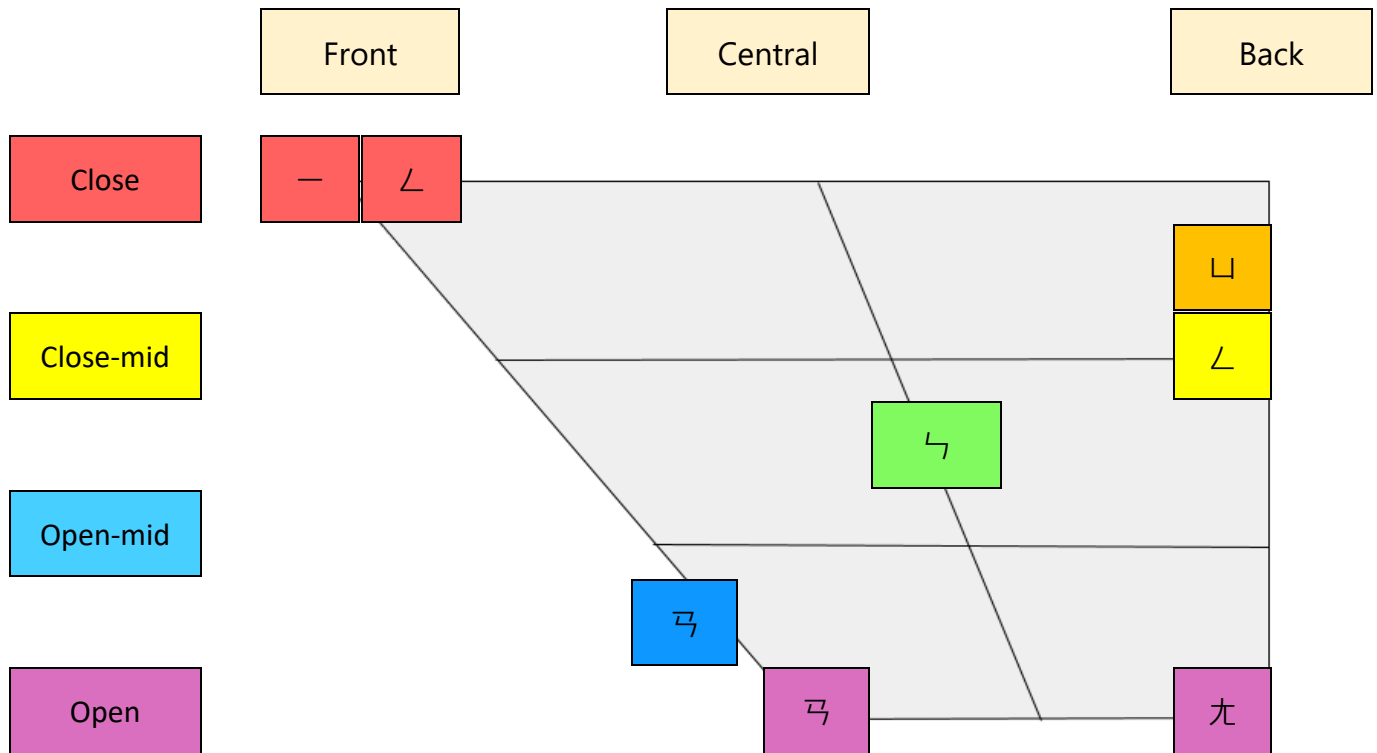


Chinese (Mandarin) oral vowels, Zhuyin



- Symbols in parentheses next to a non-phonemic vowel represent a conditioning environment, not necessarily the only one.
- Nasal allophones are shown on a separate vowel chart.

Chinese (Mandarin) nasal vowels, Zhuyin



- All symbols in this chart represent nasal allophones of vowel phonemes.



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