# New Methods for Calculating the Public Key Points of Wonderful Meridians <br> S.A. Autumn <br> (Sanatorium-preventorium of JSC Russian Railways "Vostok", Novosibirsk region, Medical center "Mediomed", Novosibirsk city) 

New methods of calculating the open key points-wonderful channels Osennij SA
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RESUME
The new methods for calculating opening key-points basing on analysis of the role of the number N of "heavenly trunks" and "terrestrial branches" binomials hours and days are described.

Differential approach to 60-days cycle on the basis of identified five types of days, as well as some properties of day types are justified.

Suggested methods for calculation of codes were compared with the traditional way to confirm the unity of the described processes.

Keywords: traditional Chinese medicine, reflexology, "wonderful meridians", key-points.

## SUMMARY

The article presents new methods for calculating the opening of key points, based on the analysis of the role of the numbers N of "heavenly trunks" and "earthly branches" of binomials of hours and days. A differentiated approach to the sixty-day cycle is substantiated on the basis of the five types of days identified, and also some properties of the types of days are given. The mathematical connection of new methods of calculating codes with each other and with the traditional method is given, which confirms the idea of the unity of the described processes.

Key words: traditional Chinese medicine, reflexology, "miraculous meridians",key points.

## INTRODUCTION

In the light of the growing interest in Zhen-Chiu therapy, the question of increasing its effectiveness arises. One of the aspects of this is the calculation of the public key points of the miraculous meridians (FM). This article presents and substantiates two new methods for calculating the codes of open FMs. Both methods are mathematically related to each other and to the traditional method described in "Zhen jiu da cheng" [1, p. 150], which speaks of the unity of the described phenomena. New methods for calculating World Cup codes are associated with the concept of types of days, which is introduced and justified in our work.

## MATERIALS AND METHODS

The traditional concepts of ancient China about cyclic processes are based on the concept of binomials, which are a binary way of expressing a repeating series of numbers from one to sixty and expressed as a combination of two numbers. The first numbers in binomials reflect one of the ten "heavenly trunks" (HC), the second - one of the twelve "earthly branches" (SB). The activity of the "miraculous meridians" (FM) manifests itself in the form of the opening of the key points of these meridians and has a cyclical nature, which can be calculated by determining the numbers N corresponding to the "heavenly trunks" and "earthly branches" of binomials of days and hours described by Yang Jizhou [1, with. 149]. The numbers $N$ of "heavenly trunks" of binomials of days (Nsd) and "terrestrial branches" of binomials of days (Nsd), the range of which is from 10 to 7, are summed as coefficients of days (CD). The numbers $N$ of "heavenly stems" of binomials of hours (Nsch) with a range from 9 to 5 and the number $N$ of "earthly branches" of binomials of hours (Nsch) with a range of 9 to 4 in total are the coefficients of hours (CC). In the domestic literature, these coefficients are referred to as "coefficients of days B" and "coefficients of hours C" [2, p. 397; 3, p. 79-80]. To calculate the FM code in the traditional way, it is necessary to subtract from 1 to 4 nines for odd days and from 2 to 5 sixes for even days from the sum of Nnsd + Nsd + Nnsch + Nsv. The result must correspond to the range of numbers from 1 to 9 for odd days and from 1 to 6 for even days [1, p. 150]: 79-80]. To calculate the FM code in the traditional way, it is necessary to subtract from 1 to 4 nines for odd days and from 2 to 5 sixes for even days from the sum of Nnsd + Nsd + Nnsch + Nsv. The result must correspond to the range of numbers from 1 to 9 for odd days and from 1 to 6 for even days [1, p. 150]: 79-80]. To calculate the FM code in the traditional way, it is necessary to subtract from 1 to 4 nines for odd days and from 2 to 5 sixes for even days from the sum of Nnsd + Nsd + Nnsch + Nsv. The result must correspond to the range of numbers from 1 to 9 for odd days and from 1 to 6 for even days [1, p. 150]:

FM code $=$ Nnsd + Nsvd + Nnsch + Nsvch -9 * $n$ (for odd days), where $n=1 \div 4$ FM
code $=$ Nnsd + Nsvd + Nnsch + Nsvd - 6 * $n$ (for even days), where $n=2 \div 5$
In traditional Chinese sources, the FM codes are designated as leftovers: "depending on the remainder received, ... [corresponding to] the number of the day and hour ... you already know exactly which point [-key] is open and at what time" [1, p. 150]. Domestic researchers use the terms code and remainder [3, p. 79-80; 2, p. 397-398] and apply a different formula for calculating the FM code: the sum of the coefficient of the day B and the coefficient of the hour C is divided by the coefficient K , equal to 9 or 6 , depending on the parity of the day, the result is a "remainder of division" [2, p. 397; 3, p. 80].

Carrying out calculations using the methods proposed below, the values of the residuals of the FM can correspond to the code ranges: for odd days from 1 to 9 , for even days from 1 to 6 - these are the so-called FM codes. In case of exceeding the specified ranges, FM codes are referred to as FM residuals. In this article, when calculating by new methods, both terms have been retained: the remainder and the FM code, and in the new calculation formulas, the designation code (ost) FM is used. If the value of the FM remainder differs from the value of the FM code, then nine for odd days or six for even days should be added to or subtracted from it.

## RESULTS OF THE STUDY

1. The method of calculating the open FM code by the daily dynamics of the numbers Nncch and correction day coefficients PKD ( $\Delta$ )

Based on the presented formulas ( $1 \mathrm{a}, 1 \mathrm{~b}$ ), the open FM codes can be defined as derivatives of four variable numbers NHsd, Nsvd, Nncch and Nsvch (the ranges of changes for each of the numbers are given above), corresponding to the NC and 3 B binomials of days and hours. When assessing different time intervals, the dynamics of each parameter turns out to be different. So, the numbers of N days (Nsd and Nsd) do not change throughout the day. In contrast to these numbers, the numbers N hours ( Nsch and Nsch ) change with each hour of the sixty-hour cycle. However, the different duration of the cycles of the numbers Nncch and Nsch leads to the fact that they are distributed differently during the day. Thus, the numbers Nsvch, starting at the hour of tzu, complete their cycle at the hour of si and repeat from the hour of y to the hour of hai. Thus, the numbers Nsvch divide the day into equal halves in the same way for all days of the sixty-day cycle. The Nncch numbers begin at the hour tzu of the first day of the sixty-hour cycle. At the end of this day, the cycles of numbers do not end, but move on to the next day, and thus they go through the entire sixty-hour cycle, ending only at the high hour of the fifth day (Table 3). In this regard, the distribution of Nncch numbers turns out to be individual for each day of the sixty-hour or five-day cycle. Thus, within a sixty-hour cycle, only Nncch numbers have a distribution for each day, which is comparable to the distribution of FM codes. To clarify the role of Nncch numbers in the formation of FM codes, a diagram model was built from these indicators for the entire sixty-day cycle. A fragment of this diagram is shown in Fig. 1. but they pass into the next day and, thus, they go through the entire sixty-hour cycle, ending only at the high hour of the fifth day (Table 3). In this regard, the distribution of Nncch numbers turns out to be individual for each day of the sixty-hour or five-day cycle. Thus, within a sixty-hour cycle, only Nncch numbers have a distribution for each day, which is comparable to the distribution of FM codes. To clarify the role of Nncch numbers in the formation of FM codes, a diagram model was built from these indicators for the entire sixty-day cycle. A fragment of this diagram is shown in Fig. 1. but they pass into the next day and, thus, they go through the entire sixty-hour cycle, ending only at the high hour of the fifth day (Table 3 ). In this regard, the distribution of Nncch numbers turns out to be individual for each day of the sixty-hour or five-day cycle. Thus, within a sixty-hour cycle, only Nncch numbers have a distribution for each day, which is comparable to the distribution of FM codes. To clarify the role of Nncch numbers in the formation of FM codes, a diagram model was built from these indicators for the entire sixty-day cycle. A fragment of this diagram is shown in Fig. 1. the distribution of Nncch numbers turns out to be individual for each day of a sixty-hour or five-day cycle. Thus, within a sixty-hour cycle, only Nncch numbers have a distribution for each day, which is comparable to the distribution of FM codes. To clarify the role of Nncch numbers in the formation of FM codes, a diagram model was built from these indicators for the entire sixty-day cycle. A fragment of this diagram is shown in Fig. 1. the distribution of Nncch numbers turns out to be individual for each day of a sixty-hour or five-day cycle. Thus, within a sixty-hour cycle, only Nncch numbers have a distribution for each day, which is comparable to the distribution of FM codes. To clarify the role of Nncch numbers in the formation of FM codes, a diagram model was built from these indicators for the entire sixty-day cycle. A fragment of this diagram is shown in Fig. 1.


Rice. 1. Model for calculating codes (residuals) FM by numbersNнсч and correction coefficients of days PKD ( $\Delta$ ) in daily dynamics.

The lines connecting the numbers Nnc have a decrease in increments of -1 from 9 to 5 and then repeat.

The lines connecting the FM codes in fragments denoting time intervals (1-4 hours, 7-10 hours, 13-15 hours, 16-17 hours, 21-23 hours) are decreasing with a step of -2 . Having a tendency to decrease, some lines of FM codes during their continuation, after the minimum values of 1 or 2 , tend to values -1 or 0 , depending on the parity of the FM codes in these fragments. For example, on the first day, in the time interval from Zi hour (1 hour) to Mao hour (4 hours), the values of the FM codes will be 8-6-4-2. When extrapolating the line of FM codes of this fragment to the hour chen ( 5 hours), the FM code should be equal to 0 , in this case, add 9 . For fragments of the FM codes presented in the second day: at the hour, the FM code $=0+6=6$ and in the hour high code FM $=-1+6=5$. In all three cases, FM codes are obtained by extrapolating fragments of FM codes, which linearly decrease with a step of -2 and tend to 0 or -1 as they continue - the values of the received FM codes correspond to traditional calculations. The construction of the codes and residuals of the FM for the remaining days of the sixty-day cycle was carried out in the same way. Diagrams of FM codes (residuals) can be obtained in the same way if, throughout the day, from the sum of Nsd + Nsd + Nnsch + Nsv, a constant value ( 9 * $n$ or 6 * $n$ ) is subtracted, equal to the one that was required to obtain the FM code in tzu hour. This allows us to identify a natural relationship between the codes (residuals) of the FM and the numbers Nnch, which makes it possible to mathematically substantiate a new method for calculating the codes (residuals) of the open key points of the FM. When analyzing the relationship between the numbers Nnch and the codes (residuals) of the FM, some features are highlighted. At first, the difference between the numbers Nncch and the codes (residuals) of the FM in the periods from the hour of tzu to the hour of sy and from the hour of $y$ to the hour of high, linearly increase by one unit with each subsequent hour. Secondly, the difference between Nncch and the FM codes (residuals) in hours tzu and y are equal to each other for one day. Thirdly, the codes (remnants) of the World Cup, lined up for the whole day, correspond to one of the five distinguished types of days, which will be discussed below. In fig. 1 shows the FM codes (residuals) of the first and second days of a sixty-day cycle, representing the first and second types of days. Row 1 reflects the daily dynamics of the numbers N nsch; row 2 - remnants (codes) of the FM, representing the first and second types of days; row 3 - FM codes obtained as a result of additional arithmetic calculations with values of FM residuals $\leq 0$; row 4 - FM codes obtained in the traditional way [1, p. 150]. Rows 3 and 4 are the same. The difference between Nncch and the remnants of the FM for the zi and y hours within one day is called the correction factor of the day (PKD ( $\Delta$ )). All correction factors for days $\operatorname{PKD}(\Delta)$ are calculated and given in table. 1, their calculation method is discussed below. The code of the open key point of the FM, calculated in the new way, will be equal to:

$$
\begin{equation*}
\text { Code (rest) FM }=\text { Nncch }-\Delta \text { sv, } \tag{2}
\end{equation*}
$$

where Nncch is the number $N$ of the "heavenly trunk" of the hour, $\Delta s v$ is the correction factor for the day PKD ( $\Delta$ ), which has undergone daily dynamics in the form of an increase by one unit in the periods from the hour tzu to the hour si and from the hour y to the hour high.

Table 1

Correction factors for days PKD $(\Delta)$ of a sixty-day cycle

| Нечетные дни и НС биномов дней |  |  |  |  | $\begin{gathered} \text { ПКД } \\ (\Delta) \text { н/ч. } \end{gathered}$ | кД | $\begin{gathered} \text { ІКД } \\ (\Delta) \\ \text { чет. } \end{gathered}$ | Четные дни и НС биномов дней |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1^{1}$ цзя ${ }^{2}$ | 3 бин | 5 moу | 7 гэн | 9 жәнь |  |  |  | $\begin{aligned} & 2 \\ & \text { n } \\ & \hline \end{aligned}$ | $\begin{gathered} 4 \\ \text { дин } \end{gathered}$ | $\begin{gathered} 6 \\ \text { цзы } \end{gathered}$ | $\begin{gathered} 8 \\ \text { синь } \end{gathered}$ | $\begin{gathered} 10 \\ \text { ryï } \end{gathered}$ |
|  | 13,43 | 25,55 |  |  | 4 | 14 | 7(1) |  |  |  | 18,48 | 30,60 |
|  | 3 | 15 |  | 19,49 | 3 | 15 | $6(0)$ |  | 24,54 |  | 28 | 40 |
|  | 33 | 45 | 7,37 | 39 | 2 | 16 | 5 | 12,42 | 4 |  | 58 | 10 |
| $1,31^{3}$ | 23,53 | 5,35 | 27 | 9 | 1 | 17 | 4 | 52 | 34 | 6,36 | 8,38 | 20,50 |
| 51 |  |  | 57 | 29,59 | $9(0)$ | 18 | 3 | 22 | 14,44 | 16 |  |  |
| 21 |  |  | 17,47 |  | 8 | 19 | 2 | 2,32 |  | 46 |  |  |
| 11,41 |  |  |  |  | 7 | 20 | 7(1) |  |  | 26,56 |  |  |
| $1^{4}$ | 3 | 5 | 2 | 4 | Типы дней |  |  | 2 | 4 | 1 | 3 | 5 |

[^0]| Нечетные дни 60-дневного цикла |  |  |  |  | $\begin{gathered} \begin{array}{c} \mathbf{N} \\ \mathbf{H} / \mathbf{\Psi} \\ \text { дней } \end{array} \\ \hline 13 \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} \Delta \mathbf{H} / \text { ч } \\ \text { дней } \end{array} \\ \hline 4 \\ \hline \end{gathered}$ | $\begin{gathered} \text { КД } \\ \hline 14 \\ \hline \end{gathered}$ | $\Delta$ чет <br> дней <br> 7(1) | N <br> четных <br> дней <br> $10(16)$ | Четные дни 60-дневного цикла |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 13,43 |  | 25,55 |  |  |  |  |  |  |  | 18,48 |  | 30,60 |
|  |  | 3 | 19,49 | 15 | 12 | 3 | 15 | 6 | 15 |  |  | 28 | 24,54 | 40 |
|  | 7,37 | 33 | 39 | 45 | 11 | 2 | 16 | 5 | 14 |  | 12,42 | 58 | 4 | 10 |
| 1,31 | 27 | 23,53 | 9 | 5,35 | 10 | 1 | 17 | 4 | 13 | 6,36 | 52 | 8,38 | 34 | 20,50 |
| 51 | 57 |  | 29,59 |  | 9 | $9(0)$ | 18 | 3 | 12 | 16 | 22 |  | 14,44 |  |
| 21 | 17,47 |  |  |  | 8(17) | 8 | 19 | 2 | 11 | 46 | 2,32 |  |  |  |
| 11,41 |  |  |  |  | 7(16) | 7 | 20 | 1(7) | 16(10) | 26,56 |  |  |  |  |
| $\begin{aligned} & 1 \text { тип } \\ & \text { дней } \end{aligned}$ | 2 тип днеи | 3 тип дней | 4 тип дней | 5 тип днен |  |  |  |  |  | 1 тип дней | $\begin{aligned} & 2 \text { тип } \\ & \text { дней } \end{aligned}$ | 3 тип дней | 4 тип дней | 5 тип дней |

The required number Nnsch can be determined from the table. 3. In the columns to the left are the days of the 60 s. The ordinal number of the day is reflected in the form of two digits: the units have a range from 0 to 9 , the register of ten a is from 0 to 5 . At the top of the table. hours of days are presented. The number Nncch is located in the cell at the intersection of the desired day and hour. The ordinal number of the hour in the 60-hour cycle and its bin are located above the Nnch number. If the remainder of the FM is <1 or> 9 (6), then 9 or 6 should be added to it or subtracted from it, depending on the parity of the day. Table 1 shows all PKD ( $\Delta$ ), their relationship with CD, and also gives the distribution of PKD $(\Delta)$ by types of days. Taking into account that during the day the PKD $(\Delta)$ increases twice linearly, starting from the initial value a1 (zi, y ) $=\Delta$, to the value a 6 ( $\mathrm{sy}, \mathrm{hi}$ ) $=\Delta+5$, the daily dynamics of $\Delta \mathrm{sv}$ will be expressed by the formula:

$$
\begin{equation*}
\Delta \mathrm{zv}=\Delta+\mathrm{n}-1 \tag{3}
\end{equation*}
$$

Table 3
Determination of the ordinal number of the hour, its binomial and the number Nncch in a 60-day cycle

| $\begin{gathered} \text { Дни } \\ 60 \text { ричного } \\ \text { цикла } \\ \mathrm{a}^{1}=\text { от } 0 \text { до } 5 \\ \hline \end{gathered}$ |  | 1VB | 2 F | 3P | 4GI | 5E | 6RP | 7 C | 8IG | 9 V | 10R |  | , |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 23-1 | 1-3 | 3-5 | 5-7 | 7-9 | 9-11 | 11-13 | 13-15 | 15-17 | 17-19 | 19-21 | 21-23 |
|  |  | час | час | час | час | час | час | час | час | час | час | час | час |
|  |  | цзы | чоу | инь | мао | чэнь | сы | y | вэй | шәнь | ю | сюй | хай |
| al | a6 | $1^{2}$ | 2 | 3 | 4 | 5 | 6 | 7 | 8 | , | 10 | 11 | 12 |
|  |  | $1 / 1^{3}$ | 2/2 | $3 / 3$ | 4/4 | 5/5 | 6/6 | $7 / 7$ | 8/8 | 9/9 | 10/10 | 1/11 | 2/12 |
| N HCY |  | $9{ }^{4}$ | 8 | 7 | 6 | 5 | 9 | 8 | 7 | 6 | 5 | 9 | 8 |
| a2 | a7 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|  |  | 3/1 | 4/2 | 5/3 | 6/4 | 7/5 | 8/6 | 9/7 | 10/8 | 1/9 | 2/10 | 3/11 | 4/12 |
| N $\mathrm{HeY}^{\text {¢ }}$ |  | 7 | 6 | 5 | 9 | 8 | 7 | 6 | 5 | 9 | 8 | 7 | 6 |
| a3 | a8 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|  |  | 5/1 | 6/2 | 7/3 | 8/4 | 9/5 | 10/6 | $1 / 7$ | 2/8 | 3/9 | 4/10 | 5/11 | 6/12 |
| N ${ }^{\text {mey }}$ |  | 5 | 9 | 8 | 7 | 6 | 5 | 9 | 8 | 7 | 6 | 5 | 9 |
| a4 | a9 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
|  |  | 7/1 | 8/2 | 9/3 | 10/4 | 1/5 | 2/6 | 3/7 | 4/8 | 5/9 | 6/10 | 7/11 | 8/12 |
| N $\quad$ нсч |  | 8 | 7 | 6 | 5 | 9 | 8 | 7 | 6 | 5 | 9 | 8 | 7 |
| a5 | $(2+1) 0$ | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|  |  | 9/1 | 10/2 | $1 / 3$ | 2/4 | $3 / 5$ | 4/6 | 5/7 | $6 / 8$ | 7/9 | 8/10 | 9/11 | 10/12 |
| N нсч |  | 6 | 5 | 9 | 8 | 7 | 6 | 5 | 9 | 8 | 7 | 6 | 5 |

Примечания: 1 а - первая цифра в числе дня 60-д.ц. (регистр десяток); 2 - порядковый номер часа в $60-ч . ц ; ;$ 3 - бином часа; 4 - число N нсч.

This numerical sequence is known as a positive or increasing arithmetic progression, having the difference of the progression $\mathrm{d}=1$ (the increasing character of the arithmetic progression is determined by the condition $\mathrm{d}>0$ ), where n is the number of members of the progression. Any member of the arithmetic progression an (change in $\Delta$ during hours of the day) is equal to the sum of the first term $(\mathrm{a} 1=\Delta)$ and the product of the difference of the arithmetic progression $(d=1)$ by the number of terms preceding the determined one ( $n-1$ ) [4, p. 424]:
$n=a 1+(n-1)$ * $d$, where $n$ is the ordinal number of the hour in the periods from tzu to si and from $y$ to hai. FM code $=$ Nncch $-(\Delta+n-1)$.
(4)

The algorithm for calculating the open FM code in the first way is based on the daily dynamics of numbers

Nnsh and PKD ( $\Delta$ ) assumes the following steps (for example, for the date January 10, 2012, the time is 11.30 ):

1) determination of the day 60 -d.ts. on 10.01.12.: $77 \backslash 7$ [5, p.314];
2) according to table. $1 \operatorname{PKD}(\Delta)=2$;
3) according to table. 3 hours "y" 199 \7, Nsch = 6;
4) FM code $=6-(2+n-1)=6-(2+1-1)=4$.

The calculation of PKD ( $\Delta$ ) of a sixty-day cycle is as follows: PKD ( $\Delta$ ) = A - 9 (for odd days) and $\operatorname{PKD}(\Delta)=A-6$ (for even days), where $A=9 * 3-C D$. Of these, 9 * 3 is an empirical value obtained empirically; KD is the coefficient of the day. If A>9 for odd days, or A>6 for even days, then PKD $(\Delta)=$ A-9 (or 6). If $1 \leq A \leq 9$ (or $\leq 6$ for even days), then the $\operatorname{PKD}(\Delta)$ will be equal to A. Thus, we get: $\operatorname{PKD}(\Delta)=$ 9 * 3 - KD - 9 (for odd days),

PKD $(\Delta)=9$ * 3 - CD - 6 (for even days)
(5 B).
The types of days are five variants of the distribution of the FM codes (residues) during the days, arranged in chronological order of sixty-hour cycles (Fig. 2 and 3). The types of days are characterized by constant fluctuations in the shape of the FM codes (residuals), subject to subtracting a constant multiple of 9 * $n$ or 6 * $n$, depending on the parity of the day required to obtain the FM code per hour tszi of each day, from the sum of the coefficients of the days and hours. The types of days are repeated every fifth day, alternating the parity (for example, for the first type of days, these are: the first, sixth, eleventh, and so on until the fifty-sixth day).

The types of days, firstly, have the same ranges of hours of the sixty-hour cycle (Table 3): for days of the first type ( $1-12$ hours), for days of the second type (13-24 hours), for days of the third type (25-36 hours ), for days of the fourth type (37-48 hours) and for days of the fifth type (49-60 hours). Secondly, the ranges of numbers Nnc are the same from the hour tzu to the hour high: for days of the first type ( 9 and 8), the second type ( 7 and 6 ), the third type ( 5 and 9), the fourth type (8 and 7), of the fifth type (6 and 5) (Table 3). NS binomials of days of the same type refer to one numerical symbolism of the elements: the first type ( 1 and 6 ) - the element of water; the second type ( 2 and 7 ) is the element of fire; the third type ( 3 and 8 ) is the element of wood; the fourth type ( 4 and 9 ) - the element of metal; the fifth type ( 5 and 10) is the element of the earth. The elements are arranged in a cosmogonic order [6, p. 20, 62], NS binomials of one type of days have "generating" (1-5) and "forming" (6-10) numbers [6, p. 62].

The relationship of FM codes (residues) in diurnal antiphase is also one of the characteristic properties for days of the same type. For example, for all days of the first type, the difference between the FM codes (residues) in the chen and xui hours is -4 , and the difference between the remaining pairs of FM codes (residuals) of this day type is +1 .

## 2. A method for calculating the open FM code by clock coefficients (CC) and correction clock coefficients N

The second method for calculating the open key points of the FM assumes the use of the CC and the correction factors of the clock N , which are introduced and justified below.


Rice. 2. Model for calculating codes (rest) FM by the method of ratio of CN and clock correction factorsN. Symmetry of oscillations of the coordination frequency 60-ch.ts. and codes (ost) FM of five types of days: 1 and 31 days (type 1), 27 days (type 2),

23 and 53 days (type 3), 9 day (type 4), 5 and 35 days (type 5 days).

As seen from Fig. 2, the oscillation of the coefficients of the CC clock repeats the course of the codes (residuals) of the FM days, but it is shifted upward along the ordinate axis. The magnitude of this shift is amenable to analysis and is the
basis for another method for calculating the FM codes: the shift of the residuals of the FM in relation to the $C N$ is a constant throughout a day, called the clock correction factor N . For illustration, a model of odd days with one $C D=17$ and $\operatorname{PKD}$ ( $\Delta$ ) = $1: 1$ and 31 days (type 1 of days), 27 days (type 2 of days), 23 and 53 days (type 3 of days), 9 days (type 4 of days), 5 and 35 days (type 5 days). Coefficients of the clock KCH are presented in the first row; in the second row - codes (remnants) of the World Cup;
in the third row - FM codes obtained as a result of additional computation with values of FM residuals <1 (Fig. 2). Oscillation of CN and FM codes (residuals) have signs of identity - dashed lines, passing through the initial and final points of the oscillations, it is possible to reveal the symmetry of the graphs and to determine the individual components of these processes - the boundaries of the sections of amplitude excitation and damping. The convergence of the dashed lines falls on the twenty-fifth hour of tzu and the fifty-fifth hour of y (attenuation) and corresponds to the $\mathrm{CN}=14$ and the FM code $=4$; the discrepancy of the dotted lines begins from the sixth hour of the sy and the thirty-sixth hour of high (excitation of the oscillation amplitude) and corresponds to the $\mathrm{CV}=13$ and the FM code $=3$. All the correction factors for the clock N of the sixty-day cycle are calculated and are in table. 2 . Thus, the correction factors of the clock N make it possible to obtain the codes (residuals) of the open key points of the FM after subtracting them from the CC: make it possible to reveal the symmetry of the graphs and to determine the individual components of these processes - the boundaries of the sections of amplitude excitation and attenuation. The convergence of the dashed lines falls on the twenty-fifth hour of tzu and the fifty-fifth hour of y (attenuation) and corresponds to the $\mathrm{CN}=14$ and the FM code $=4$; the discrepancy of the dotted lines begins from the sixth hour of the sy and the thirty-sixth hour of high (excitation of the oscillation amplitude) and corresponds to the $\mathrm{CV}=13$ and the FM code $=3$. All the correction factors for the clock N of the sixty-day cycle are calculated and are in table. 2 . Thus, the correction factors of the clock $N$ make it possible to obtain the codes (residuals) of the open key points of the FM after subtracting them from the CC: make it possible to reveal the symmetry of the graphs and to determine the individual components of these processes - the boundaries of the sections of amplitude excitation and attenuation. The convergence of the dashed lines falls on the twenty-fifth hour of tzu and the fifty-fifth hour of y (attenuation) and corresponds to the $\mathrm{CN}=14$ and the FM code $=4$; the discrepancy of the dotted lines begins from the sixth hour of the sy and the thirty-sixth hour of high (excitation of the oscillation amplitude) and corresponds to the $\mathrm{CV}=13$ and the FM code $=3$. All the correction factors for the clock N of the sixty-day cycle are calculated and are in table. 2. Thus, the correction factors of the clock $N$ make it possible to obtain the codes (residuals) of the open key points of the FM after subtracting them from the CC: The convergence of the dashed lines falls on the twenty-fifth hour of tzu and the fifty-fifth hour of y (attenuation) and corresponds to the $\mathrm{CN}=14$ and the FM code $=4$; the discrepancy of the dotted lines begins from the sixth hour of the sy and the thirty-sixth hour of high (excitation of the oscillation amplitude) and corresponds to the $\mathrm{CV}=13$ and the FM code $=3$. All the correction factors for the clock N of the sixty-day cycle are calculated and are in table. 2 . Thus, the correction factors of the clock N make it possible to obtain the codes (residuals) of the open
 Code (rest) FM $=\mathrm{KCH}-\mathrm{N}$, (6) where N is the hour correction factor. The coefficient is calculated according to the formula: N $=\Delta+9$. (7)

Algorithm for calculating the FM code using clock coefficients and correctionof the clock coefficients N assumes the following steps (for example, for the date January 17, 2012, the time is 9.45):

1) determination of the day 60 - d.ts. on 01/17/12: $144 \backslash 2$ [4, p. 314];
2) according to table. 2: $N=12$;
3) according to table. 3 at 9.45 on the 14th day of the 60th c. there will be an hour "sy", $422 / 6$ hour 60 -hour, the number Nnc = 8, Nsv = 4;
4) $\mathrm{KCH}=$ Nncch + Nsvch $=8+4=12$;
5) FM code $=\mathrm{KCH}-\mathrm{N}=12-12=0+6=6$.

Methods for calculating the opening of the key points of "wonderful meridians" developed by the author have a mathematical relationship with each other and with the traditional method. The traditional calculation of the opening of the key points of the FM can be transformed as follows:
a) FM code $=\mathrm{KCH}+[9 * 3-\Delta-9(6)]-9(6) * \mathrm{n}=\mathrm{KCH}+9 * 3-\Delta-9(6)-9(6) * \mathrm{n}=$ Nncch + Nsvch $-\Delta-9=$ Nncch -
$(\Delta+9-N s v c h)=$ Nncch $-(\Delta+n-1)=$ Nncch $-\Delta s v,(2)$
where n is the ordinal number of the hour from tzu to si, and from y to hai;
b) FM code $=\mathrm{KCH}+\mathrm{KD}-9(6) * \mathrm{n}=\mathrm{KCH}+[9 * 3-\Delta-9(6)]-9(6) * \mathrm{n}=\mathrm{KCH}+[9 * 3-\Delta-9(6)-9(6) * \mathrm{n}]=\mathrm{KCH}+$
[- $\Delta-9$ (6) $]=$ CV - N. (6)
All three methods of calculating the FM activity are graphically presented: traditional [1, p. 149-150] and two new ones (Fig. 3). In all cases, the symmetry of fluctuations of conventional units (residual FM, clock coefficients (CC) and CD + CC sums), shifted along the ordinate axis and representing the basis for different methods of calculating FM codes in relation to each of these values, is revealed:

1) traditional -9 * $n$ (or $6 * n$ ) is subtracted from the sum of $K C H+K D$, the value of which is selected from so that their difference, which is the FM code, meets the condition $1 \leq$ FM code $\leq 9$ (or 6 ) - the upper part of Fig. 3;
2) calculation of FM codes using numbers NHC4 and correction factors of days (PKD ( $\Delta$ )), that have undergone daily dynamics is carried out according to the formula FM code $=$ Nncch $-(\Delta+n-1)$ is illustrated in the lower part of Fig. 3;
3) calculation of FM codes using clock factors (CC) and clock correction factors N
is produced according to the formula FM Code $=\mathrm{KCH}-\mathrm{N}$ and is represented in the middle part of Fig. 3.
Below is an algorithm for the traditional calculation of the codes of the FM key points on 01/17/2012, time 17.30:
4) determination of the day 60-d.ts. and its binomial is $144 \backslash 2$ [4, p. 314];
5) determination of the number NHsd = 8 [1, p. 149];
6) determination of the number of $\mathrm{Nsvd}=10$ [1, p. 149];
7) determination of the hour 60-h.ts. and its binomial is $466 \backslash 4$;
8) determination of the number Nncch $=9$ [1, p. 149];
9) determination of the number N zvch $=6$ [1, p. 149];
10) calculation of the sum $\sum$ numbersN $=$ Nsd + Nsvd + Nsch + Nsvd $=8+10+9+6=33$;
11) calculating the FM code - subtracting sixes (since an even day) from the sum of the numbers $N$ in order to the result corresponded to the range from 1 to 6 : FM code $=33-6 * 5=3$.

## DISCUSSION AND CONCLUSIONS

The article describes and proposes for discussion two fundamentally new ways of opening the key points of the FM in two-hour time intervals, the results of which unambiguously coincide with the existing traditional calculations (Table 4).

Table 4 shows a fragment of the calculations of the codes of the open key points of the World Cup for hours 1 and 60 days 60d.ts. Similar calculations cover the entire 60-d.c., and a mathematical relationship is also given between the two new and traditional calculations, which confirms that the new calculations presented lead to the correct, reference result. From a medical point of view, the new calculation methods and the existing traditional one are identical to each other. The proposed methods are distinguished by shorter calculation algorithms in comparison with the traditional method [1, p. 149-150] and are the basis for a differentiated approach to the sixty-day cycle. In addition, a number of regularities have been identified concerning the distribution of the residuals (codes) of the FM key points in accordance with the five types of days identified. A general pattern has been revealed for two new and traditional methods of calculating the codes of the open points-keys of the FM, which consists in the absolute symmetry of the oscillations of the residuals of the FM, the clock coefficients (CC) and the CD + CC sums, representing a single mathematical basis for calculating the FM codes in relation to each of these quantities. The use of new methods for determining the open key points of the FM can be recommended in the practical work of reflexologists, as an alternative to the canonical method [1, p. 149-150]. The use of new methods for determining the open key points of the FM can be recommended in the practical work of reflexologists, as an alternative to the canonical method [1, p. 149-150]. The use of new methods for determining the open key points of the FM can be recommended in the practical work of reflexologists, as an alternative to the canonical method [1, p. 149-150].

Table 4 (franment)
Summary table of the calculation of the codes of the public key points of the FM new and traditional ways, as well as the mathematical relationship between them


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[^0]:    Примечания: ${ }^{1}$ - величина НС;
    ${ }^{2}$ - традиционное название HC ;
    ${ }^{3}$ - дни 60 -д.ц. одной четности, имеющие один ПКД ( $\Delta$ ) - в ячейках, расположенных в одной строке таблицы;
    ${ }^{4}$ - тип дней - к нему относятся все дни, расположенные в столоце таблицы.

