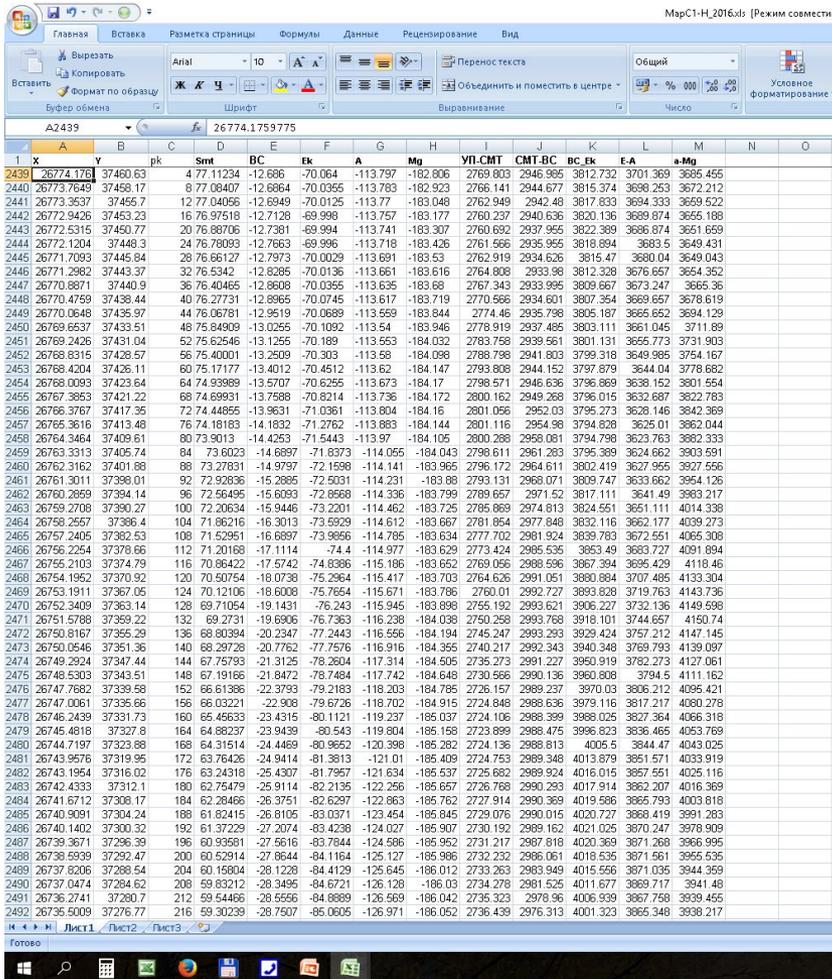


Построение карт и оценка точности структурных построений

1) Для разреза формируем файл с глубинами ОГ и скоростями



MapС1-Н_2016.xls [Режим совместности]

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|------|------------|----------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------|---|---|
| 1 | x | y | pk | Smt | BC | Ek | A | Mg | VI-CMT | CMT-BC | BC-Ek | E-A | a-Mg | | |
| 2439 | 26774.178 | 37460.63 | 4.77.11234 | -12.686 | -70.064 | -113.797 | -182.806 | 2769.803 | 2946.985 | 3812.732 | 3701.369 | 3686.455 | | | |
| 2440 | 26773.7649 | 37459.17 | 9.77.08407 | -12.6864 | -70.0355 | -113.793 | -182.923 | 2766.141 | 2944.677 | 3815.374 | 3690.253 | 3672.212 | | | |
| 2441 | 26773.3537 | 37455.7 | 12.77.04055 | -12.6849 | -70.0125 | -113.77 | -183.048 | 2762.949 | 2942.48 | 3817.633 | 3694.333 | 3659.522 | | | |
| 2442 | 26772.9426 | 37453.23 | 16.76.97518 | -12.7128 | -69.998 | -113.757 | -183.177 | 2760.237 | 2940.636 | 3820.136 | 3689.874 | 3655.188 | | | |
| 2443 | 26772.5315 | 37450.77 | 20.76.88706 | -12.7381 | -69.994 | -113.741 | -183.307 | 2760.692 | 2937.955 | 3822.389 | 3686.874 | 3651.659 | | | |
| 2444 | 26772.1204 | 37448.3 | 24.76.78093 | -12.7663 | -69.996 | -113.718 | -183.426 | 2761.566 | 2935.955 | 3818.894 | 3683.5 | 3649.431 | | | |
| 2445 | 26771.7093 | 37445.84 | 28.76.66127 | -12.7973 | -70.0029 | -113.691 | -183.53 | 2762.919 | 2934.626 | 3815.47 | 3680.04 | 3649.043 | | | |
| 2446 | 26771.2982 | 37443.37 | 32.76.5342 | -12.8285 | -70.0136 | -113.661 | -183.616 | 2764.808 | 2933.98 | 3812.326 | 3676.657 | 3654.352 | | | |
| 2447 | 26770.8871 | 37440.9 | 36.76.40465 | -12.8608 | -70.0355 | -113.635 | -183.68 | 2767.343 | 2933.995 | 3809.667 | 3673.247 | 3665.36 | | | |
| 2448 | 26770.4759 | 37438.44 | 40.76.27731 | -12.8965 | -70.0745 | -113.617 | -183.719 | 2770.568 | 2934.601 | 3807.354 | 3669.657 | 3678.619 | | | |
| 2449 | 26770.0648 | 37435.97 | 44.76.06781 | -12.9519 | -70.0889 | -113.559 | -183.844 | 2774.46 | 2935.798 | 3805.187 | 3655.652 | 3694.129 | | | |
| 2450 | 26769.6537 | 37433.51 | 48.76.84909 | -13.0255 | -70.1092 | -113.54 | -183.946 | 2778.919 | 2937.485 | 3803.111 | 3651.045 | 3711.89 | | | |
| 2451 | 26769.2426 | 37431.04 | 52.76.62546 | -13.1255 | -70.189 | -113.563 | -184.032 | 2783.758 | 2939.561 | 3801.131 | 3655.773 | 3713.903 | | | |
| 2452 | 26768.8315 | 37428.57 | 56.76.40001 | -13.2509 | -70.303 | -113.58 | -184.098 | 2788.798 | 2941.803 | 3799.318 | 3649.985 | 3754.167 | | | |
| 2453 | 26768.4204 | 37426.11 | 60.76.17177 | -13.4012 | -70.4512 | -113.62 | -184.147 | 2793.808 | 2944.152 | 3797.879 | 3644.04 | 3778.682 | | | |
| 2454 | 26768.0093 | 37423.64 | 64.74.93989 | -13.5707 | -70.6255 | -113.673 | -184.17 | 2798.571 | 2946.636 | 3796.869 | 3638.152 | 3801.554 | | | |
| 2455 | 26767.5983 | 37421.22 | 68.74.69931 | -13.7588 | -70.8214 | -113.736 | -184.172 | 2800.162 | 2949.268 | 3796.015 | 3632.687 | 3822.783 | | | |
| 2456 | 26767.1872 | 37418.75 | 72.74.44855 | -13.9631 | -71.0361 | -113.804 | -184.16 | 2801.056 | 2952.03 | 3795.273 | 3628.146 | 3842.369 | | | |
| 2457 | 26766.7761 | 37416.28 | 76.74.18183 | -14.1832 | -71.2762 | -113.883 | -184.144 | 2801.116 | 2954.98 | 3794.626 | 3625.01 | 3862.044 | | | |
| 2458 | 26766.3650 | 37413.81 | 80.73.9013 | -14.4253 | -71.5443 | -113.97 | -184.105 | 2800.288 | 2958.081 | 3794.798 | 3623.763 | 3882.333 | | | |
| 2459 | 26765.9539 | 37411.34 | 84.73.6023 | -14.6897 | -71.8373 | -114.055 | -184.043 | 2798.611 | 2961.283 | 3795.389 | 3624.662 | 3903.591 | | | |
| 2460 | 26765.5428 | 37408.87 | 88.73.27831 | -14.9797 | -72.1598 | -114.141 | -183.965 | 2796.172 | 2964.611 | 3802.419 | 3627.955 | 3927.566 | | | |
| 2461 | 26765.1317 | 37386.01 | 92.72.92836 | -15.2885 | -72.5031 | -114.231 | -183.88 | 2793.131 | 2968.071 | 3809.747 | 3633.662 | 3954.126 | | | |
| 2462 | 26764.7206 | 37363.14 | 96.72.56495 | -15.6093 | -72.8668 | -114.336 | -183.799 | 2789.657 | 2971.62 | 3817.111 | 3641.49 | 3983.217 | | | |
| 2463 | 26764.3095 | 37340.27 | 100.72.20634 | -15.9446 | -73.2201 | -114.462 | -183.725 | 2785.869 | 2974.813 | 3824.551 | 3651.111 | 4014.338 | | | |
| 2464 | 26763.8984 | 37317.4 | 104.71.86216 | -16.3013 | -73.5929 | -114.612 | -183.657 | 2781.854 | 2977.849 | 3832.116 | 3662.177 | 4039.273 | | | |
| 2465 | 26763.4873 | 37294.57 | 108.71.52951 | -16.6897 | -73.9856 | -114.785 | -183.634 | 2777.702 | 2981.924 | 3839.783 | 3672.551 | 4065.308 | | | |
| 2466 | 26763.0762 | 37271.7 | 112.71.20168 | -17.1114 | -74.4 | -114.977 | -183.629 | 2773.424 | 2986.535 | 3853.49 | 3683.727 | 4091.894 | | | |
| 2467 | 26762.6651 | 37248.84 | 116.70.86422 | -17.5742 | -74.8386 | -115.186 | -183.652 | 2769.056 | 2998.596 | 3867.394 | 3695.429 | 4118.46 | | | |
| 2468 | 26762.2540 | 37226.0 | 120.70.50754 | -18.0738 | -75.2964 | -115.417 | -183.703 | 2764.626 | 2991.051 | 3880.884 | 3707.485 | 4133.304 | | | |
| 2469 | 26761.8429 | 37203.18 | 124.70.12106 | -18.6008 | -75.7654 | -115.671 | -183.786 | 2760.01 | 2992.727 | 3893.628 | 3719.763 | 4143.736 | | | |
| 2470 | 26761.4318 | 37180.31 | 128.69.71054 | -19.1431 | -76.243 | -115.945 | -183.898 | 2755.192 | 2993.621 | 3906.227 | 3732.136 | 4149.598 | | | |
| 2471 | 26761.0207 | 37157.44 | 132.69.2731 | -19.6906 | -76.7363 | -116.238 | -184.038 | 2750.258 | 2993.768 | 3918.101 | 3744.657 | 4150.74 | | | |
| 2472 | 26760.6096 | 37134.57 | 136.68.80394 | -20.2347 | -77.2443 | -116.556 | -184.194 | 2745.247 | 2993.293 | 3929.424 | 3757.212 | 4147.145 | | | |
| 2473 | 26760.1985 | 37111.7 | 140.68.29726 | -20.7762 | -77.7576 | -116.916 | -184.355 | 2740.217 | 2992.343 | 3940.348 | 3769.793 | 4139.097 | | | |
| 2474 | 26759.7874 | 37088.84 | 144.67.75793 | -21.3125 | -78.2804 | -117.314 | -184.505 | 2735.215 | 2991.227 | 3950.919 | 3782.273 | 4127.061 | | | |
| 2475 | 26759.3763 | 37066.0 | 148.67.19166 | -21.8472 | -78.7484 | -117.742 | -184.648 | 2730.566 | 2990.136 | 3960.808 | 3794.5 | 4111.162 | | | |
| 2476 | 26758.9652 | 37043.18 | 152.66.61386 | -22.3793 | -79.2183 | -118.203 | -184.785 | 2726.157 | 2989.237 | 3970.03 | 3806.212 | 4095.421 | | | |
| 2477 | 26758.5541 | 37020.31 | 156.66.03221 | -22.908 | -79.6726 | -118.702 | -184.915 | 2724.848 | 2988.636 | 3979.116 | 3817.217 | 4080.278 | | | |
| 2478 | 26758.1430 | 37000.3 | 160.65.45633 | -23.4315 | -80.1121 | -119.237 | -185.037 | 2724.106 | 2988.399 | 3988.025 | 3827.364 | 4066.318 | | | |
| 2479 | 26757.7319 | 37000.3 | 164.64.88237 | -23.9439 | -80.543 | -119.804 | -185.158 | 2723.899 | 2988.475 | 3996.623 | 3836.465 | 4053.769 | | | |
| 2480 | 26757.3208 | 37000.3 | 168.64.31514 | -24.4489 | -80.9652 | -120.398 | -185.282 | 2724.136 | 2988.813 | 4006.5 | 3844.47 | 4043.025 | | | |
| 2481 | 26756.9097 | 37000.3 | 172.63.75426 | -24.9414 | -81.3813 | -121.01 | -185.409 | 2724.753 | 2988.348 | 4013.679 | 3851.571 | 4033.919 | | | |
| 2482 | 26756.4986 | 37000.3 | 176.63.24318 | -25.4307 | -81.7957 | -121.634 | -185.537 | 2725.683 | 2989.924 | 4016.015 | 3857.561 | 4025.116 | | | |
| 2483 | 26756.0875 | 37000.3 | 180.62.75479 | -25.9114 | -82.2135 | -122.256 | -185.657 | 2726.768 | 2990.293 | 4017.914 | 3862.207 | 4016.369 | | | |
| 2484 | 26755.6764 | 37000.3 | 184.62.28466 | -26.3751 | -82.6297 | -122.863 | -185.762 | 2727.914 | 2990.369 | 4019.586 | 3865.793 | 4003.818 | | | |
| 2485 | 26755.2653 | 37000.3 | 188.61.82415 | -26.8105 | -83.0371 | -123.454 | -185.845 | 2729.076 | 2990.015 | 4020.727 | 3868.419 | 3991.283 | | | |
| 2486 | 26754.8542 | 37000.3 | 192.61.37229 | -27.2074 | -83.4238 | -124.027 | -185.907 | 2730.192 | 2989.162 | 4021.025 | 3870.247 | 3978.909 | | | |
| 2487 | 26754.4431 | 37000.3 | 196.60.93681 | -27.5616 | -83.7844 | -124.586 | -185.952 | 2731.217 | 2987.818 | 4020.369 | 3871.268 | 3966.995 | | | |
| 2488 | 26754.0320 | 37000.3 | 200.60.52914 | -27.8844 | -84.1164 | -125.127 | -185.986 | 2732.232 | 2986.061 | 4018.535 | 3871.561 | 3955.535 | | | |
| 2489 | 26737.6206 | 37288.54 | 204.60.15804 | -28.1238 | -84.3919 | -125.645 | -186.012 | 2733.263 | 2983.949 | 4015.556 | 3871.035 | 3944.359 | | | |
| 2490 | 26737.2092 | 37284.52 | 208.60.3331 | -28.3495 | -84.6721 | -126.128 | -186.015 | 2734.279 | 2981.525 | 4015.577 | 3869.717 | 3941.48 | | | |
| 2491 | 26736.7978 | 37280.7 | 212.60.54466 | -28.5556 | -84.8889 | -126.569 | -186.042 | 2735.323 | 2979.96 | 4006.599 | 3867.768 | 3938.455 | | | |
| 2492 | 26736.3864 | 37276.77 | 216.60.30239 | -28.7507 | -85.0605 | -126.971 | -186.052 | 2736.439 | 2978.313 | 4001.323 | 3865.348 | 3936.217 | | | |

2) Формируем массив данных по всей площади

3) Рассчитываем погрешности прогноза глубин ОГ

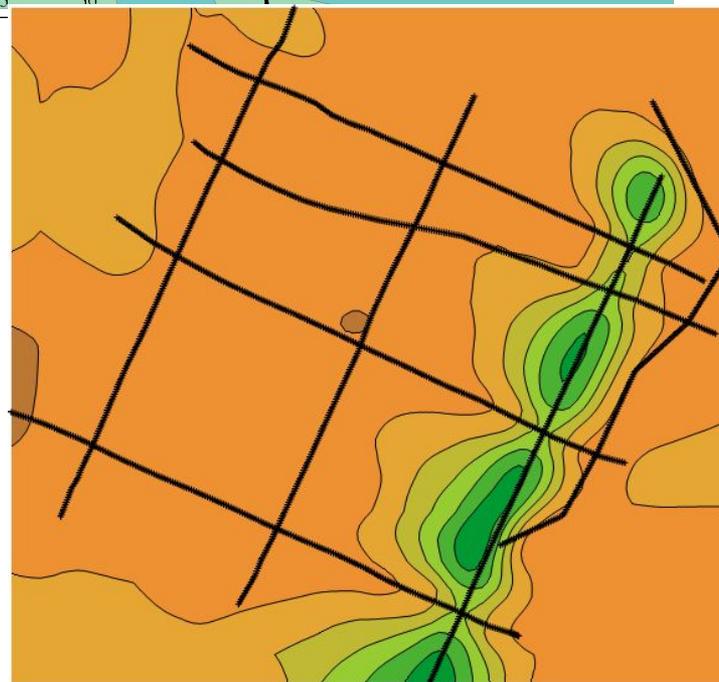
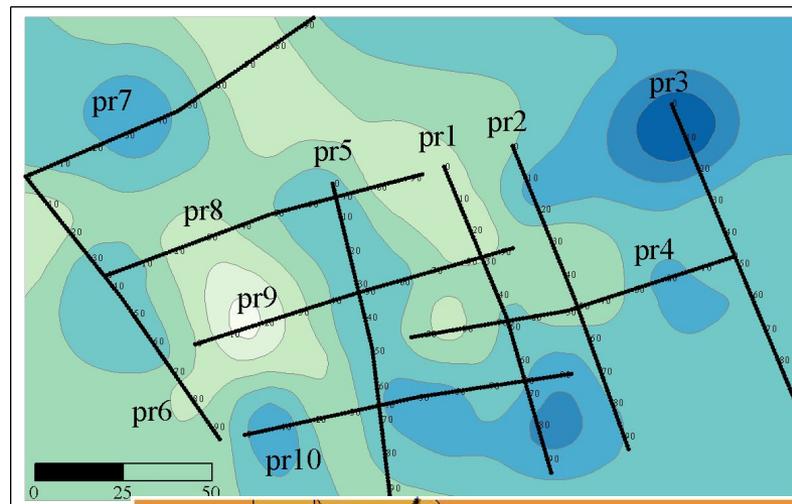
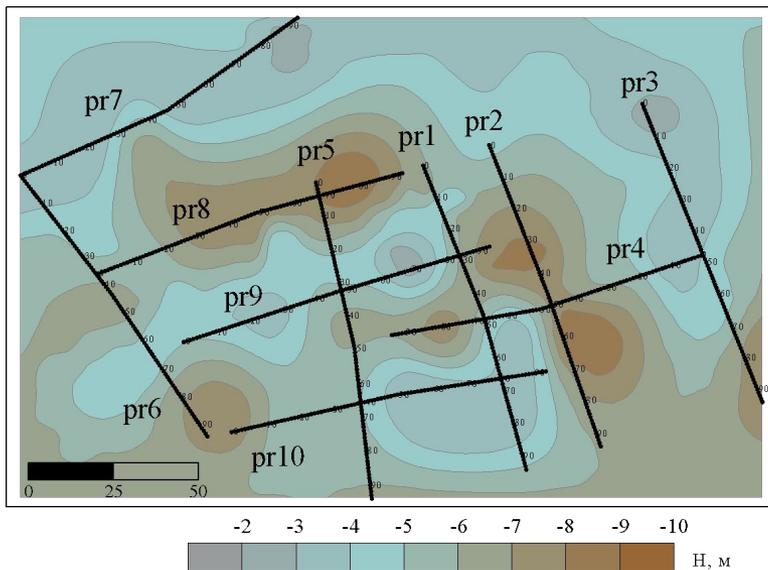
$$\sigma_{\Delta Z} = \sqrt{V^2 \sigma_T^2 - T^2 \sigma_V^2} / 2$$

где V , T - интервальная скорость и время пробега отраженной волны; σ_T и σ_V - средние квадратичные погрешности определения времени и скорости

среднеквадратические погрешности

$$\sigma = \sqrt{\frac{1}{N-1} \sum (x_i - \bar{x})^2}$$

4) С учетом величины погрешности строим карты (обращаем внимание на изолинии в углах карты, свой ПР – другим цветом, на оформление)



5) Дополнительно строим карту вычисленных погрешностей

что

надо

1) Теория – для чего строятся карты?

2) По каким принципам формируются.

3) Анализ карт (всех)

4) Уравнение уровня прогнозирования (например 1536 ± 30 м/с)

Разрешающая способность

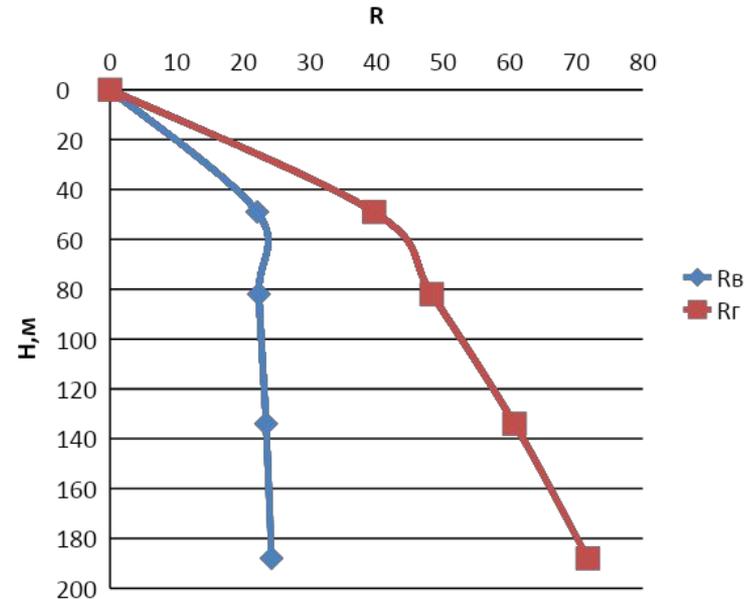
1) Работаем со средними значениями скоростей, глубин, max и min периоды определяем визуально по WinView

2) Определяем минимальное расстояние между двумя объектами на котором они еще различимы как два разных объекта, а не сливаются в один по вертикали $R_v = \lambda/8$

по горизонтали $R_g = d\phi/2$

$$d\phi = \sqrt{2\lambda H + \frac{\lambda^2}{4}}$$

3) Строим графики



что

надо

1) Теория – что такое РС? Какая бывает? Для чего вычислять РС?

2) По каким формулам рассчитывается.

3) Анализ полученных зависимостей (с учетом Вашей стратиграфической привязки)